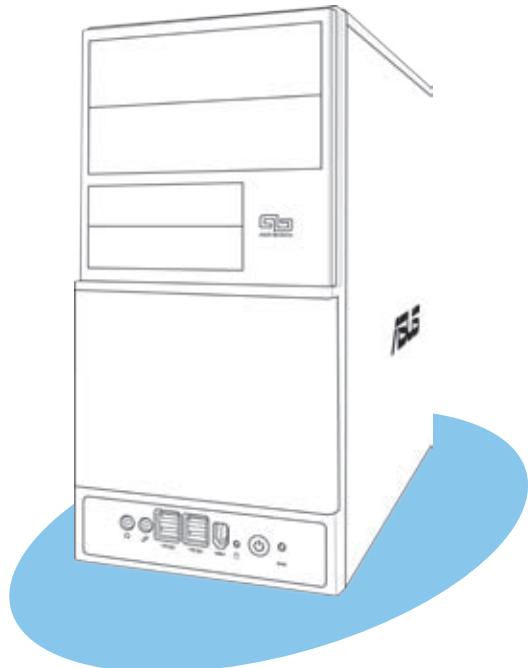




Vintage V2-AH2

PC (Desktop Barebone)



E2508

First Edition V1
July 2006

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing devices into the system, carefully read all the documentation that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet. Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

VORSICHT: Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

About this guide

Audience

This guide provides general information and installation instructions about the ASUS Vintage V2-AH2 PC(Desktop Barebone). This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. Chapter 1: System introduction

This chapter gives a general description of the PC(Desktop Barebone). The chapter presents the system features including introduction on the front and rear panel, and internal components.

2. Chapter 2: Basic installation

This chapter provides step-by-step instructions on how to install components in the system.

3. Chapter 3: Starting up

This chapter helps you power up the system and install drivers and utilities from the support CD.

4. Chapter 4: Motherboard information

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

5. Chapter 5: BIOS information

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions used in this guide



WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you MUST follow to complete a task.



NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. ASUS Websites

The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. Optional Documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

System package contents

Check your Vintage V2-AH2 system package for the following items.

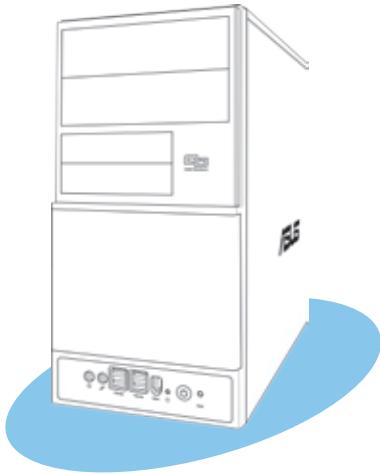


If any of the items is damaged or missing, contact your retailer immediately.

1. **ASUS Vintage V2-AH2 PC(Desktop Barebone)** with
 - ASUS motherboard
 - 300 W PFC power supply unit
 - ASUS chassis
2. **Cable**
 - AC power cable
3. **Support CD**
4. **User guide**

System introduction

This chapter gives a general description of the barebone system. The chapter presents the system features including introduction on the front and rear panel, and internal components.



1.1 Welcome!

Thank you for choosing the ASUS Vintage V2-AH2!

The ASUS Vintage V2-AH2 is an all-in-one barebone system with a powerful computing capability, expandability, and versatile connectivity.

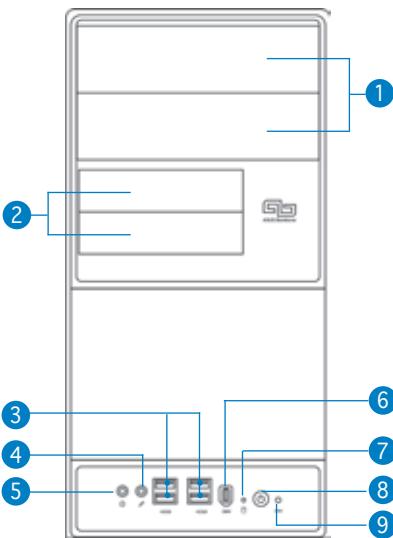
The system comes in a stylish mini-tower casing and powered by the ASUS motherboard that supports the latest AMD Athlon™ 64/64FX, or Sempron™ desktop processors in the 940-pin package.

Two DDR DIMM slots support up to 2 GB of system memory using DDR400/533/667/800 DIMMs. The system also provides a high-resolution graphics Nvidia integrated graphics controller and supports the PCI Express technology with a PCI Express x1 slot, PCI Express x 16 slot, and features a host of storage and connectivity including Serial ATA support, USB 2.0, and 6-channel audio capability.

With Vintage V2-AH2, you are ahead in the world of power computing.

1.2 Front panel

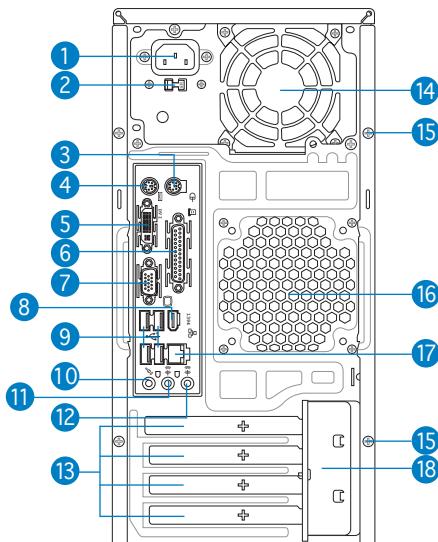
The front panel includes the optical drive bays, floppy disk drive slot, power button, and several I/O ports are located at the front panel.



1. **5.25-inch drive bay cover.** Covers two 5.25-inch bays for optical drives.
2. **3.5-inch drive bay cover.** Covers two 3.5-inch bays for a hard disk and a floppy disk drive.
3. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
4. **Microphone port.** This Mic (pink) port connects a microphone.
5. **Headphone port.** This Line In (green) port connects a headphone with a stereo mini-plug.
6. **IEEE 1394 port.** This port connects a IEEE 1394 device.
7. **Hard disk drive activity LED.** The LED indicates a read-write activity.
8. **Power button.** Press this button to turn the system on.
9. **Reset button.** Press this button to reboot the system without turning off the power.

1.3 Rear panel

The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.



1. **Power connector.** This connector is for the power cable and plug.
2. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area. See the next section before adjusting this selector.
3. **PS/2 mouse port.** This green 6-pin connector is for a PS/2 mouse.
4. **PS/2 keyboard port.** This purple 6-pin connector is for a PS/2 keyboard.
5. **DVI connector.** This port connects IEEE 1394 devices such as digital still/video cameras, camcorders, external disk drives, or other devices.
6. **Parallel port.** This 25-pin port connects a printer, scanner, or other devices.
7. **VGA port.** This port connects a VGA monitor.
8. **IEEE 1394 port.** This port connects IEEE 1394 devices such as digital still/video cameras, camcorders, external disk drives, or other devices.
9. **USB 2.0 ports 1, 2, 3 and 4.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
10. **Microphone port (pink).** This port connects a microphone.
11. **Line Out port (lime).** This port connects a headphone or a speaker.
12. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.



Refer to the audio configuration table below for the function of the audio ports in 2, 4, or 6-channel configuration.

Audio 2, 4, or 6-channel configuration

Port	Headset 2-channel	4-channel	6-channel
Light Blue	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In

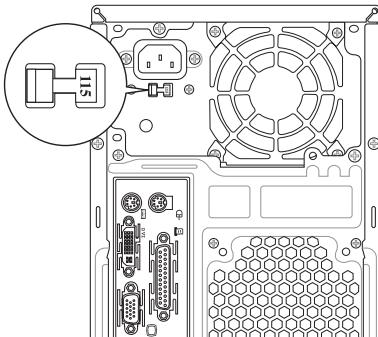
13. **Expansion slot metal brackets.** Covers the expansion card slots. Remove the metal bracket only when installing an expansion card.
14. **Power supply unit fan vent.** This vent is for the PSU fan that provides ventilation inside the power supply unit.
15. **Cover screws.** Secure the side cover to the chassis.
16. **Chassis fan vent.** This vent is for the fan that provides ventilation inside the system chassis.
17. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.
18. **Metal bracket lock.** Secures the expansion card metal bracket to the chassis.

Selecting the voltage

The system's power supply unit has a 115 V/230 V voltage selector switch located beside the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127 V, set the switch to 115 V.

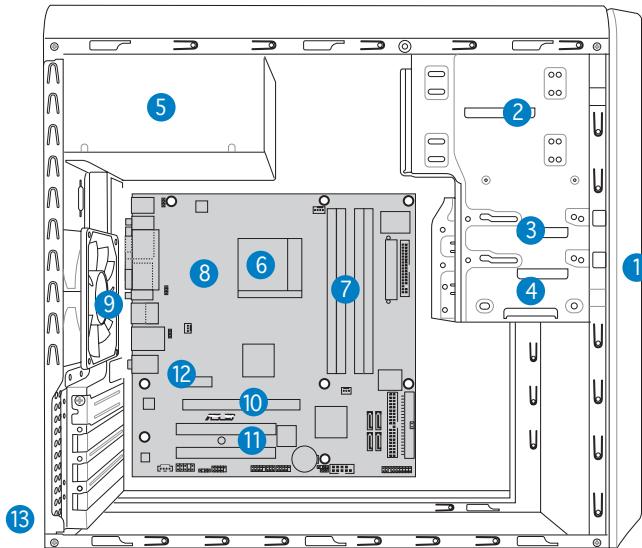
If the voltage supply in your area is 200-240 V, set the switch to 230 V.



Setting the switch to 115 V in a 230 V environment or 230 V in a 115 V environment will seriously damage the system!

1.4 Internal components

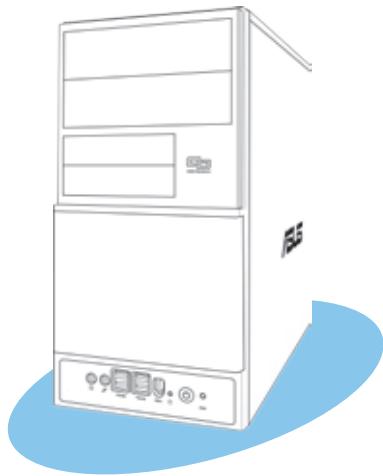
The illustration below is the internal view of the system when you remove the top cover and the power supply unit. The installed components are labeled for your reference. Proceed to Chapter 2 for instructions on installing additional system components.



1. Front panel cover
2. 5.25-inch optical drive bays
3. Hard disk drive bay
4. Floppy disk drive bay
5. Power supply unit
6. CPU socket
7. DIMM sockets
8. ASUS motherboard
9. Chassis fan
10. PCI Express x16 slot
11. PCI slots
12. PCI Express x1 slot
13. Metal bracket lock

Chapter 2

This chapter provides step-by-step instructions on how to install components in the system.



2.1 Preparation

Before you proceed, make sure that you have all the components you plan to install in the system.

Basic components to install:

1. Central processing unit (CPU)
2. DDR Dual Inline Memory Module (DIMM)
3. Expansion card(s)
4. Hard disk drive
5. Optical drive
6. Floppy disk drive

Tool

Phillips (cross) screw driver

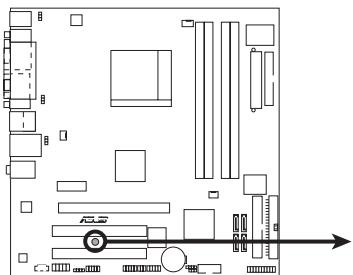
2.2 Before you proceed

Take note of the following precautions before you install components into the system.

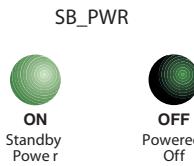


- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

The motherboard comes with an onboard standby power LED. This LED lights up to indicate that the system is ON, in sleep mode or in soft-off mode, and not powered OFF. Unplug the power cable from the power outlet and make sure that the standby power LED is OFF before installing any system component.

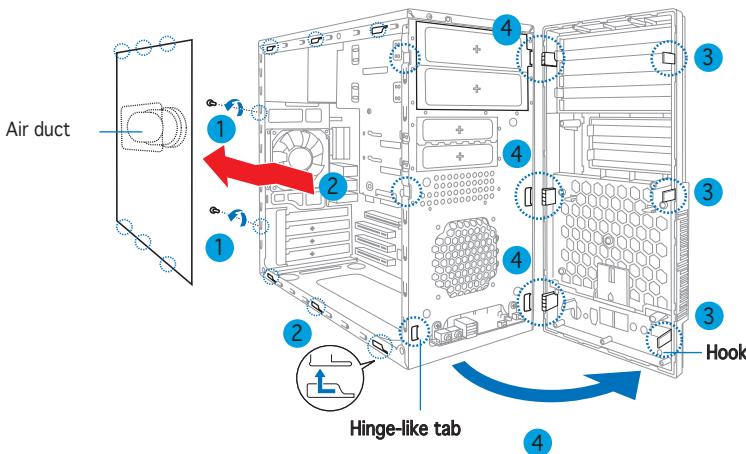


Onboard LED



2.3 Removing the side cover and front panel assembly

1. Remove the cover screws on the rear panel.
2. Pull the side cover toward the rear panel until its hooks disengage from the chassis. Set the side cover aside.
3. Locate the front panel assembly hooks, then lift them until they disengage from the chassis.
4. Swing the front panel assembly to the right, until the hinge-like tabs on the right side of the assembly are exposed.
5. Remove the front panel assembly, then set aside.



2.4 Central Processing Unit (CPU)

2.4.1 Overview

The motherboard comes with a 940-pin AM2 socket designed for the AMD Athlon™ 64 X2/Athlon™ 64/Athlon™ FX/Sempron™ processor.

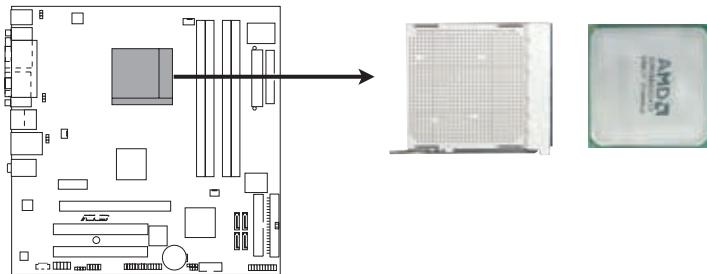


The AM2 socket has a different pinout from the 940-pin socket designed for the AMD Opteron™ processor. Make sure you use a CPU is designed for the AM2 socket. The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!

2.3.1 Installing the CPU

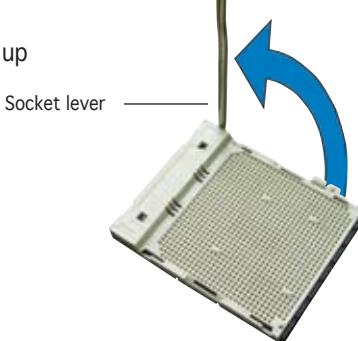
To install a CPU:

1. Locate the CPU socket on the motherboard.



CPU AM2 Socket 940

2. Unlock the socket by pressing the lever sideways, then lift it up to a 90°- 100° angle.



Make sure that the socket lever is lifted up to 90°-100° angle; otherwise, the CPU will not fit in completely.

3. Position the CPU above the socket such that the CPU corner with the gold triangle matches the socket corner with a small triangle.
4. Carefully insert the CPU into the socket until it fits in place.



5. When the CPU is in place, push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.
6. Install a CPU heatsink and fan following the instructions that came with the heatsink package.

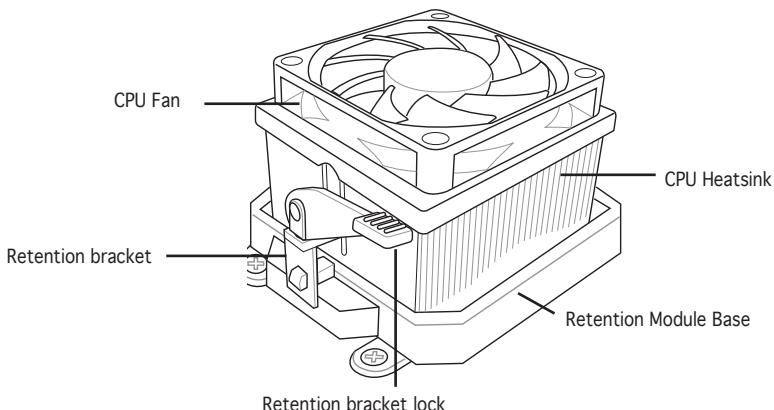


2.4.3 Installing the CPU fan and heatsink assembly

The AMD Athlon™ 64FX/64 or Sempron™ processor requires a specially designed CPU fan and heatsink assembly to ensure optimum thermal condition and performance.



- Your boxed CPU heatsink and fan assembly should come with installation instructions for the CPU, heatsink, and the retention mechanism. If the instructions in this section do not match the CPU documentation, follow the latter.
- The retention module base is already installed on the motherboard. You do not have to remove the retention module base when installing the CPU or installing other motherboard components.
- If you purchased a separate CPU fan and heatsink assembly, make sure that a thermal interface material is properly applied to the CPU surface or the heatsink bottom before you install the CPU fan and heatsink assembly.



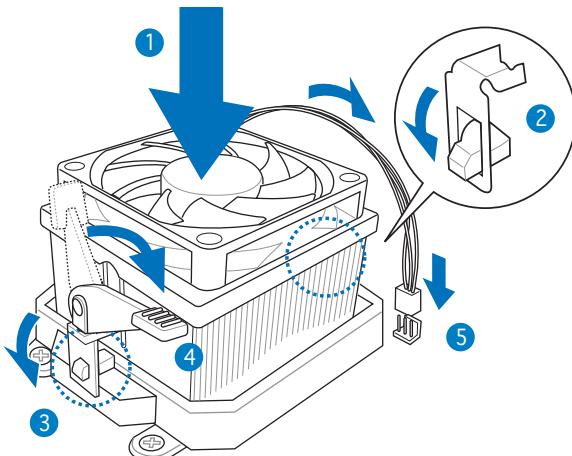
To install the CPU fan and heatsink assembly:

1. Place the heatsink on top of the installed CPU.



Make sure that the fan and heatsink assembly perfectly fits the retention mechanism module base; otherwise you can not lock the retention bracket.

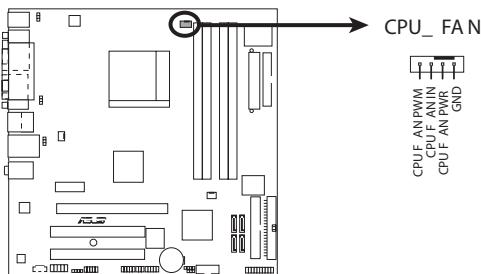
2. Attach one end of the retention bracket to the retention module base.
3. Attach the other end of the retention bracket (near the retention bracket lock) to the retention module base until it clicks in place.
4. Push down the retention bracket lock on the retention mechanism to secure the fan and heatsink to the module retention module base.



5. Connect the CPU fan cable to the connector labeled CPU_FAN on the motherboard.



Do not forget to connect the CPU fan connector! Hardware monitoring error can occur if you fail to plug this connector.

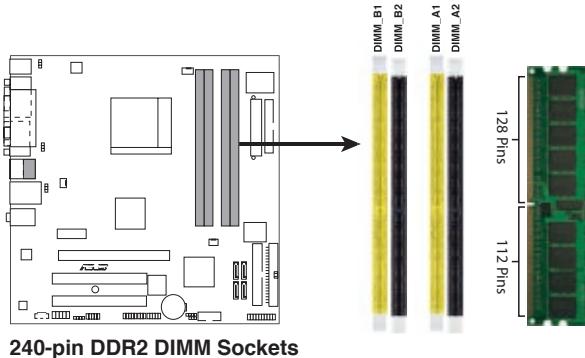


CPU Fan Connector

2.5 Installing a DIMM

The motherboard comes with two 240-pin Double Data Rate 2 (DDR2) Dual Inline Memory Module (DIMM) sockets.

The following figure illustrates the location of the sockets:



2.5.1 Memory configurations

You may install 256 MB, 512 MB, and 1 GB unbuffered/non-ECC/ECC DDR2 DIMMs into the DIMM sockets using the memory configurations in this section.

- Installing DDR DIMMs other than the recommended configurations may cause memory sizing error or system boot failure. Use any of the recommended configurations on the next page.
- Install only identical (the same type and size) DDR DIMM pairs for each channel.
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.
- Due to chipset limitation, this motherboard does not support DIMM modules with less than or equal to 128 Mb memory chips.

Recommended memory configurations

CPU	Mode	Sockets	
		DIMM_A1 (black)	DIMM_B1 (black)
Single-core	Single-channel	—	Populated
	Dual-channel	Populated	Populated
Dual-core	Single-channel	Populated	—
	Single-channel	—	Populated
	Dual-channel	Populated	Populated

DDR2 667 Qualified Vendors List

Size	Vendor	Model	Brand	Side(s)	Component	CL DIMM support		
						A	B	C
512MB	KINGSTON	E5108AE-6E-E	N/A	SS	KVR667D2N5/512			
1024MB	KINGSTON	E5108AE-6E-E	N/A	DS	KVR667D2N5/1G	V	V	
512MB	KINGSTON	E5108AE-6E-E	N/A	SS	KVR667D2E5/512			
256MB	KINGSTON	HYB18T256800AF3	N/A	SS	KVR667D2N5/256			
256MB	SAMSUNG	K4T56083QF-ZCE6	N/A	SS	M378T253FZ0-CE6		V	
512MB	SAMSUNG	K4T56083QF-ZCE6	N/A	DS	M378T6453FZ0-CE6	V	V	
256MB	SAMSUNG	K4T56083QF-ZCE6(ECC)	N/A	SS	M391T3253FZ0-CE6			
512MB	SAMSUNG	K4T56083QF-ZCE6(ECC)	N/A	DS	M391T6453FZ0-CE6			
256MB	SAMSUNG	K4T51163QC-ZCE6	N/A	SS	M378T3354CZ0-CE6	V	V	
512MB	SAMSUNG	ZCE6K4T51083QC	N/A	SS	M378T6553CZ0-CE6	V	V	
1024MB	SAMSUNG	ZCE6K4T51083QC	N/A	DS	M378T2953CZ0-CE6			
512MB	MICRON	4VB41D9CZM	N/A	DS	MT16HTF6464AY-667B4			
256MB	Infineon	HYB18T512160AF-3S	N/A	SS	HYS64T32000HU-3S-A		V	
512MB	Infineon	HYB18T512800AF3S	N/A	SS	HYS64T64000HU-3S-A	V	V	
1024MB	Infineon	HYB18T512800AF3S	N/A	DS	HYS64T128020HU-3S-A			
256MB	Infineon	HYB18T256800AF3S(ECC)	N/A	SS	HYS72T32000HU-3S-A			
512MB	Infineon	HYB18T512800AF3S(ECC)	N/A	SS	HYS72T64000HU-3S-A	V	V	V
1024MB	Infineon	HYB18T512800AF3S(ECC)	N/A	DS	HYS72T128020HU-3S-A	V	V	
512MB	Hynix	HY5PS12821Afp-Y5	N/A	SS	HYMP564U64AP8-Y5	V	V	V
1024MB	Hynix	HY5PS12821Afp-Y5	N/A	DS	HYMP512U64AP8-Y5			
1024MB	Hynix	HY5PS1G831fp-Y5(ECC)	N/A	SS	HYMP112U72P8-Y5			
512MB	Hynix	HY5PS12821Afp-Y5(ECC)	N/A	SS	HYMP564U72AP8-Y5			
1024MB	Hynix	HY5PS12821Afp-Y5(ECC)	N/A	DS	HYMP512U72AP8-Y5			
512MB	Hynix	HY5PS12821Afp-Y4	N/A	SS	HYMP564U64AP8-Y4	V	V	
1024MB	Hynix	HY5PS12821Afp-Y4	N/A	DS	HYMP512U64AP8-Y4			
512MB	Hynix	HY5PS12821Afp-Y4(ECC)	N/A	SS	HYMP564U72AP8-Y4			
1024MB	Hynix	HY5PS12821Afp-Y4(ECC)	N/A	DS	HYMP512U72AP8-Y4			
256MB	ELPIDA	E2508AB-6E-E	N/A	SS	EBE25UC8ABFA-6E-E	V	V	V
512MB	ELPIDA	E5108AE-6E-E	N/A	SS	EBE51UD8AEFA-6E-E	V	V	V
1024MB	ELPIDA	Engineering Sample	N/A	DS	EBE11UD8AEFA-6E-E			
512MB	crucial	Heat-Sink Package	N/A	DS	BL6464AA664.16FB	V	V	V
1024MB	crucial	Heat-Sink Package	N/A	DS	BL12864AA664.16FA	V	V	
512MB	crucial	Heat-Sink Package	N/A	DS	BL6464AL664.16FB			
1024MB	crucial	Heat-Sink Package	N/A	DS	BL12864AL664.16FA	V	V	V
512MB	crucial	Heat-Sink Package	N/A	DS	BL6464AA663.8FA			
1024MB	crucial	Heat-Sink Package	N/A	DS	BL12864AA663.16FA	V		
512MB	Kingmax	E5108AE-6E-E	N/A	SS	KLC22F-A8EB5			
1024MB	Kingmax	E5108AE-6E-E	N/A	DS	KLCD48F-A8EB5			
512MB	Apacer	E5108AE-6E-E	N/A	SS	78.91092.420			
1024MB	Apacer	E5108AE-6E-E	N/A	DS	78.01092.420			
512MB	A-DATA	E5108AE-6E-E	N/A	SS	M20EL5G3H3160B1C0Z			

DDR2 800 Qualified Vendors List

Size	Vendor	Model	Brand	Side(s)	Component	CL DIMM support		
						A	B	C
256MB	SAMSUNG	K4T56083QF-ZCE7	N/A	SS	M378T3253FZ3-CE7	V		
256MB	SAMSUNG	K4T56083QF-ZCE7(ECC)	N/A	SS	M391T3253FZ3-CE7	V	V	
512MB	SAMSUNG	EDD339XX	N/A	SS	M378T6553CZ3-CE7	V	V	
512MB	Infineon	HYB18T256800AF25	N/A	DS	HYS64T64520HU-2.5-A			
512MB	Hynix	HY5PS12821AFP-S6	N/A	SS	HYMP564U64AP8-S6		V	
1024MB	Hynix	HY5PS12821AFP-S6	N/A	DS	HYMP512U64AP8-S6	V	V	
512MB	MICRON	5JAI1Z9DQQ	N/A	SS	MT8HTF6464AY-80EA3	V	V	V
1024MB	MICRON	5JAI1Z9DQQ	N/A	DS	MT16HTF12864AY-80EA3	V	V	
512MB	CORSAIR	Heat-Sink Package	N/A	SS	CM2X512A-6400			
1024MB	CORSAIR	Heat-Sink Package	N/A	DS	CM2X1024-6400PRO	V	V	
256MB	A-DATA	E2508AB-GE-E	N/A	SS	M20EL6F3G3170A1D0Z			
256MB	A-DATA	E2508AB-GE-E	N/A	SS	M20EL6F3G3160A1D0Z		V	
256MB	A-DATA	E2508AB-GE-E	N/A	SS	M20EL6F3G3160A1D0Z			
512MB	A-DATA	E2508AB-GE-E	N/A	DS	M20EL6F3H4170A1D0Z			
256MB	Apacer	E2508AB-GE-E	N/A	SS	78.81091.420			
512MB	Apacer	E2508AB-GE-E	N/A	DS	78.91091.420		V	
512MB	Crucial	Heat-Sink Package	N/A	SS	BL6464AA804.8FA			
1024MB	Crucial	Heat-Sink Package	N/A	DS	BL12864AA804.16FA			

Legend:

SS - Single Sided **DS** - Double Sided **CL** - CAS Latency

A - supports one module inserted into either slot, in a Single-channel memory configuration.

B - supports one pair of modules inserted into both slots as one pair of Dual-channel memory configuration.



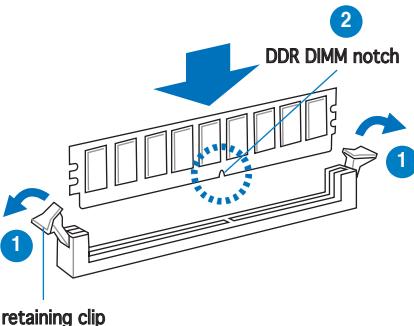
Visit the ASUS website (www.asus.com) for the latest Qualified Vendors List.

2.5.2 Installing a DIMM



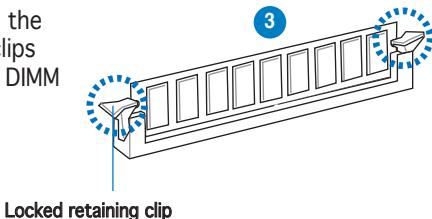
Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

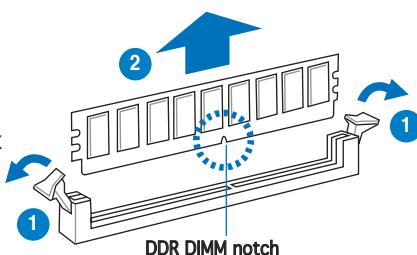
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



2.5.3 Removing a DIMM

To remove a DIMM:

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

2.6 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.

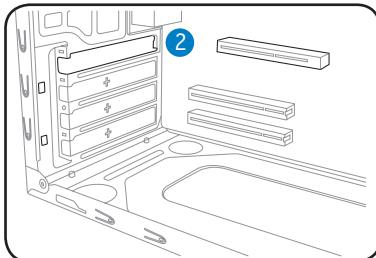


Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

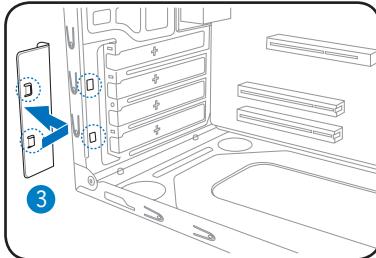
2.6.1 Installing an expansion card

To install an expansion card:

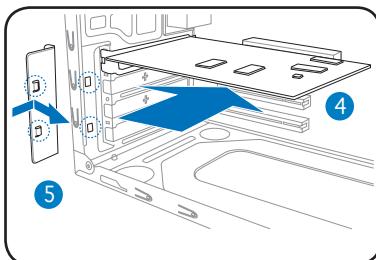
1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the metal bracket opposite the slot that you intend to use. Keep the screw for later use.



3. Remove the metal bracket lock.



4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.



2.6.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 5 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables below.
3. Install the software drivers for the expansion card.

Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable interrupt
4*	12	Communications Port (COM1)*
5*	13	Sound Card (sometimes LPT2)
6	14	Floppy Disk Controller
7*	15	Printer Port (LPT1)*
8	3	System CMOS/Real Time Clock
9*	4	ACPI Mode when used
10*	5	IRQ holder for PCI steering
11	6	IRQ holder for PCI steering
12	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14	9	Primary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCI slot 1	shared	—	—	—	—	—	—	—
PCI slot 2	—	shared	—	—	—	—	—	—
Onboard 1394 controller	—	—	—	—	used	—	—	—



When using PCI cards on shared slots, ensure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments; otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

2.6.3 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. The figure shows a LAN card installed on a PCI slot.



2.6.4 PCI Express x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The figure below shows a network card installed on the PCI Express x1 slot.



2.6.5 PCI Express x16 slot

This motherboard supports PCI Express x16 graphic cards that comply with the PCI Express specifications. The figure shows a graphics card installed on the PCI Express x16 slot.



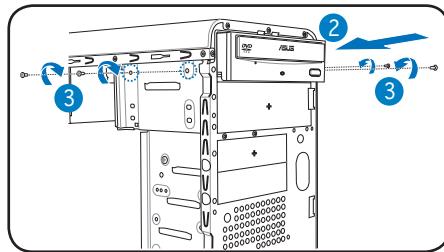
2.7 Installing storage drives

2.7.1 Optical drive

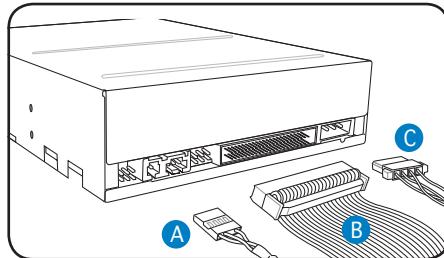
The system supports up to two 5.25" optical drives such as CD-ROM, CD-RW, DVD-ROM, and DVD-RW drives.

To install an optical drive:

1. Place the chassis upright, then remove the upper 5.25" drive bay metal plate cover.
2. Insert the optical drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the optical drive with two screws on both sides of the bay.



4. Connect the audio (A), IDE (B), and power (C) plugs to connectors at the back of the drive.



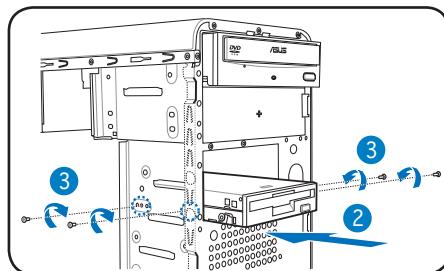
5. Connect the other end of the IDE cable to the secondary IDE connector (labeled SEC_IDE) on the motherboard. See page 4-6 for the connector location.
6. Connect the other end of the audio cable to the 4-pin connector labeled CD on the motherboard. See page 4-9 for the connector location.

2.7.2 Floppy disk drive

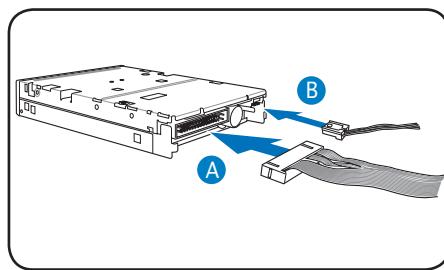
The system supports a 3.5" floppy disk drive.

To install a floppy disk drive:

1. Place the chassis upright, then remove the lower 3.5" drive bay metal plate cover.
2. Insert the floppy disk drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the floppy disk drive with two screws on both sides of the bay.



4. Connect the signal (A) and power (B) plugs to connectors at the back of the drive.



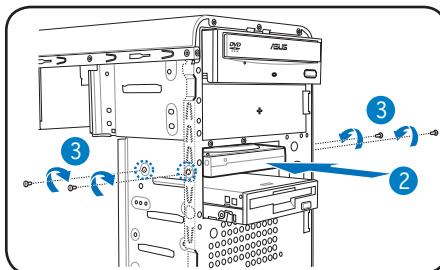
5. Connect the other end of the floppy cable to the floppy disk drive connector (labeled FLOPPY) on the motherboard. See page 4-6 for the connector location.

2.7.3 Hard disk drive

The system supports a 3.5" IDE or SATA hard disk drive.

To install a hard disk drive:

1. Place the chassis upright, then remove the upper 3.5" drive bay metal plate cover.
2. Insert the hard disk drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the hard disk drive with two screws on both sides of the bay.

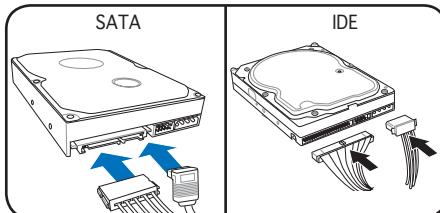


4. **For SATA HDD:** Connect the SATA signal and power plugs to the connectors at the back of the drive.



Some Serial ATA HDDs have two power connectors (legacy 4-pin and SATA power 15-pin). Depending on the available power supply plugs, use only one of the power connectors. Connecting a power plug on both connectors could damage the drive.

For IDE HDD: Connect the IDE and power plugs to the connectors at the back of the drive.



5. **For SATA HDD:** Connect the other end of the Serial ATA cable to a SATA connector on the motherboard. See page 4-7 for the location of the Serial ATA connectors.

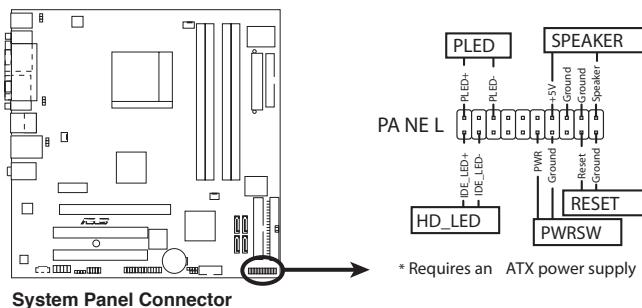
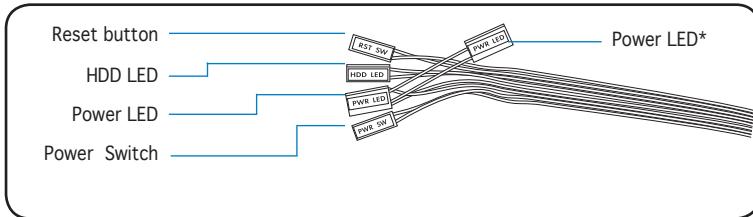
For IDE HDD: Connect the other end of IDE cable to the connector (labeled PRI_IDE) on the motherboard. See page 4-6 for the location of the IDE connectors.

2.8 Connecting cables

You may have disconnected some cables when you installed system components. Connect these cables before you replace the chassis cover.

Front panel buttons and LEDs

Connect the **reset button**, **power switch**, **power LED**, and **HDD LED** cables to their respective leads in the system panel connector on the motherboard. See page 4-11 for the system panel descriptions.



* Requires an ATX power supply .

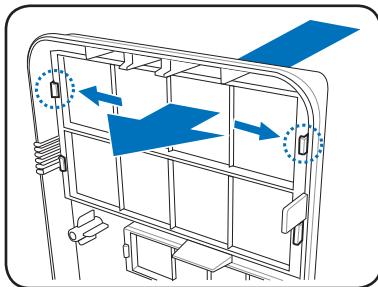


*The extra 2-pin power LED is for other Vintage V2 models.

2.9 Removing the bay covers

If you installed an optical and/or floppy disk drive, remove the bay cover(s) on the front panel assembly before reinstalling it to the chassis. To do this:

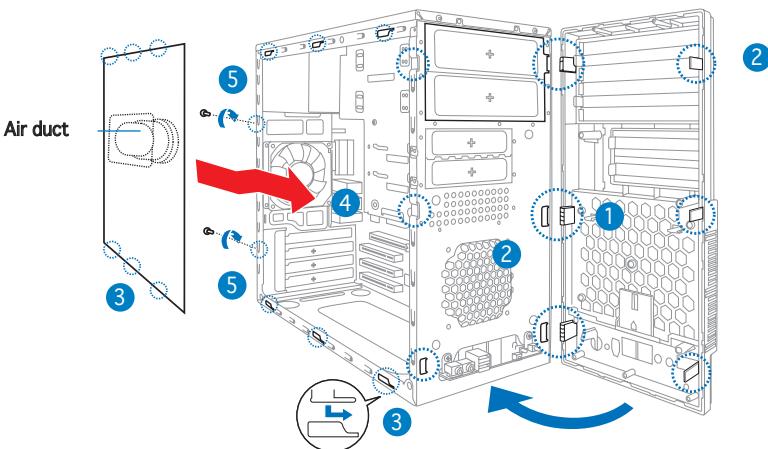
1. Locate the bay cover locks.
2. Press the locks outward to release the bay cover.
3. Push the bay cover inward, then set it aside.
4. Follow the same instructions to remove the 3.5" drive bay cover.



2.10 Reinstalling the front panel assembly and side cover

To reinstall the front panel assembly and side cover:

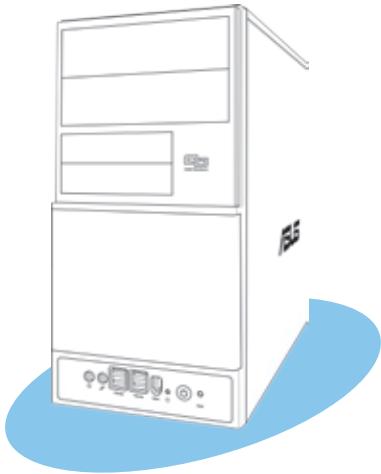
1. Insert the front panel assembly hinge-like tabs to the holes on the right side of the chassis.
2. Swing the front panel assembly to the left, then insert the hooks to the chassis until the front panel assembly fits in place.
3. Insert the side cover hooks to the chassis top and bottom holes.
4. Push the side cover to the direction of the front panel until it fits in place.
5. Secure the cover with two screws you removed earlier.



Chapter 3

This chapter helps you power up the system and install drivers and utilities from the support CD.

Starting up



3.1 Installing an operating system

The PC(desktop barebone) supports Windows® 2000/XP operating systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.

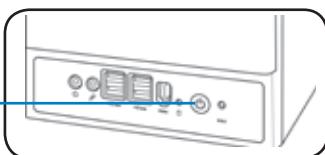


Because motherboard settings and hardware options vary, use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

3.2 Powering up

Press the system power button () to enter the OS.

Press to turn the system on



3.3 Support CD information

The support CD that came with the system contains useful software and several utility drivers that enhance the system features.



The contents of the support CD are subject to change at any time without notice. Visit the ASUS website regularly for updates.

Place the CD in the optical drive. The CD automatically displays the Drivers menu if Autorun is enabled in your computer. If Autorun is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the CD.



3.3.1 Drivers menu

The drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices.



ASUS InstAll-Installation Wizard for Drivers

Installs the ASUS drivers.

NVIDIA nForce Chipset Driver

Installs the NVIDIA nForce chipset driver.

NVIDIA GeForce 6150 Display Driver

Installs the NVIDIA GeForce 6150 display driver.

SoundMAX ADI1986A Audio Driver

Installs the SoundMAX ADI1986A audio driver.

AMD Cool'n Quiet Driver

Installs the AMD Cool'n Quiet driver.

USB 2.0 Driver

Installs the USB 2.0 driver.

3.3.2 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.



ASUS InstAll-Installation Wizard for Utilities

Installs ASUS utilities.

ASUS PC Probe II

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

ASUS Update

The ASUS Update utility allows you to update the motherboard BIOS in a Windows® environment. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP).

ASUS Screen Saver

Installs the ASUS screen saver.

ADOBE Acrobat Reader V7.0

The Adobe® Acrobat® Reader V7.0 is for opening, viewing, and printing documents in Portable Document Format (PDF).

ASUS Cool 'n' Quiet Utility

Installs the ASUS Cool 'n' Quiet utility.

Microsoft DirectX 9.0c

The Microsoft® DirectX® 9.0c is a multimedia technology that enhances computer graphics and sounds. DirectX® improves the multimedia features of your computer so you can enjoy watching TV and movies, capturing videos, or playing games on your computer.



Microsoft Windows XP Service Pack 2 already includes Microsoft Direct X 9.0c. If your system is Microsoft Windows XP Service Pack 2-embedded, skip Microsoft Direct X 9.0c installation.



The screen display and utilities option may not be the same for different operating system versions.

Anti- Virus Utility

Installs anti-virus utility.

3.3.3 Make Disk menu

The Make Disk menu allows you to make driver disks.



NVIDIA 32bit Win2K SATA RAID Driver

Allows you to create a NVIDIA 32bit Win2K SATA RAID driver disk.

NVIDIA 32bit WinXP SATA RAID Driver

Allows you to create a NVIDIA 32bit WinXP SATA RAID driver disk.

NVIDIA 64bit SATA RAID Driver

Allows you to create a NVIDIA 64bit SATA RAID driver disk.

3.3.4 Manual menu

The Manual menu contains a NVIDIA RAID User's Manual. Click the item, you can open the manual.

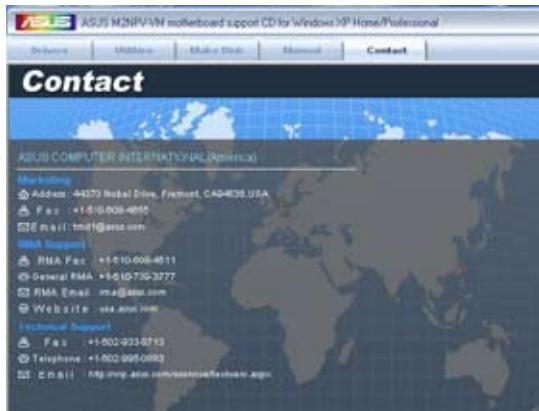


NVIDIA RAID User's Manual

Allows you to open the NVIDIA RAID user's manual.

3.3.5 ASUS Contact information

Click the Contact tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.

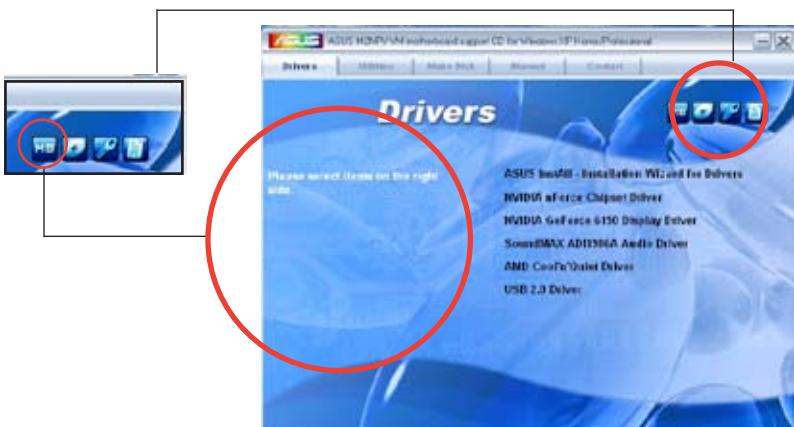


3.3.6 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

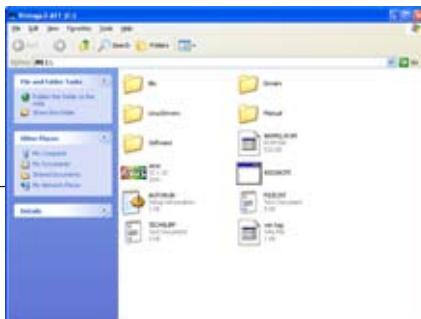
Motherboard Info

Displays the general specifications of the motherboard.



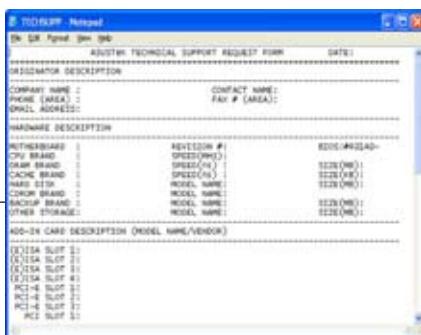
Browse this CD

Displays the support CD contents in graphical format.



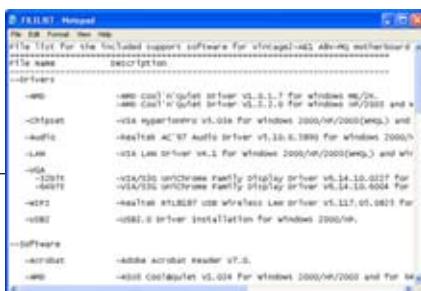
Technical support Form

Displays the ASUS Technical Support Request Form that you have to fill out when requesting technical support.



Filelist

Displays the contents of the support CD and a brief description of each in text format.



3.4 Software information

Most of the applications in the support CD have wizards that will conveniently guide you through the installation. View the online help or readme file that came with the software for more information.

3.4.1 Cool 'n' Quiet!™ Technology



- Make sure to install the Cool 'n' Quiet!™ driver and application before using this feature.
- The AMD Cool 'n' Quiet!™ technology supports AMD Athlon™ XP and higher processors only.

The system motherboard supports the AMD Cool 'n' Quiet!™ Technology that dynamically and automatically change the CPU speed, voltage, and amount of power depending on the CPU loading.

Enabling Cool 'n' Quiet!™ Technology

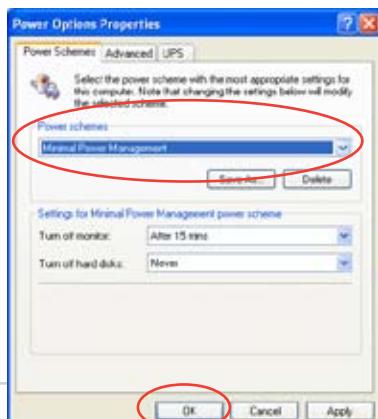
To enable Cool 'n' Quiet!™ Technology:

1. Turn on the system and enter BIOS by pressing the **** key during the Power On Self-Tests (POST).
2. Go to the **Advanced** menu > **CPU Configuration**, then set the **Cool 'n' Quiet** item to **Enabled**. See section "5.4 Advanced Menu" for details.
3. Go to the **Power** menu, then set the **ACPI 2.0 Support** item to **Yes**. See section "5.5 Power Menu" for details.
4. Save your changes, then exit the BIOS Setup.
5. Set the **Power Option Properties** depending on the operating system. Refer to the next section for details.

Setting the power options

Windows® 2000/XP

1. From the Windows® 2000/XP operating system, click the **Start** button. Select **Settings**, then **Control Panel**.
2. Make sure the Control Panel is set to Classic View.
3. Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.
4. Click the **Power...** button. The following dialog box appears.
5. From the **Power schemes** combo list box, select **Minimal Power Management**.
6. Click **OK** to effect settings.



Launching the Cool 'n' Quiet!™ application

The motherboard support CD includes the Cool 'n' Quiet!™ software application that enables you to view your system's real-time CPU frequency and core voltage.



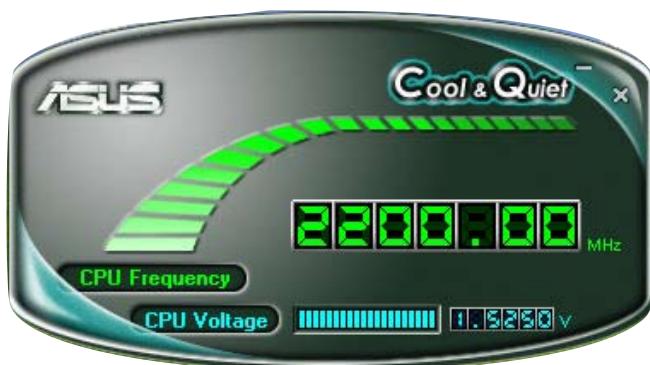
Make sure to install the Cool 'n' Quiet!™ software from the motherboard support CD. Refer to section "3.3.2 Utilities menu", for details.

To launch the Cool 'n' Quiet!™ application:

Windows® XP OS

1. Click the **Start** button.
2. Select **All Programs > ASUS > Cool & Quiet > Cool & Quiet > Cool & Quiet V1.024.**

The Cool 'n' Quiet!™ application window appears and displays the current CPU frequency and core voltage. Click (X) to close the window or (–) to minimize.



3.4.2 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.



ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1. Place the support CD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX**. See section “3.3.2 Utilities menu” for the **Utilities** screen menu.
3. The ASUS Update utility is copied to your system.

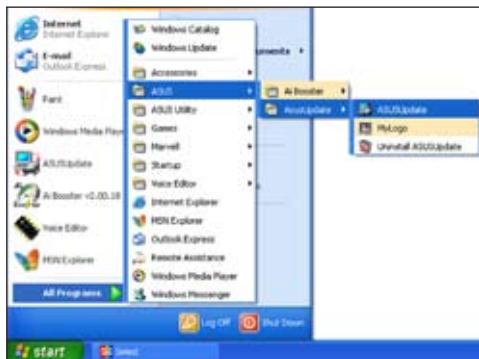


Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The **ASUS Update** main window appears.



2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next**.
3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.



4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.
5. Follow the screen instructions to complete the update process.



The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.



Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.



3. Locate the BIOS file from the **Open** window, then click **Save**.
4. Follow the screen instructions to complete the update process.



3.4.3 ASUS MyLogo™

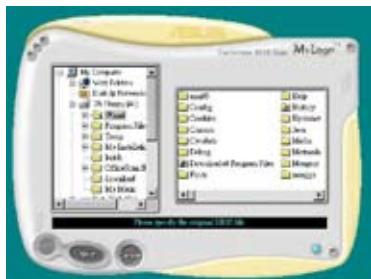
The ASUS MyLogo™ utility lets you customize the boot logo. The boot logo is the image that appears on screen during the Power-On Self-Tests (POST). The ASUS MyLogo™ is automatically installed when you install the **ASUS Update** utility from the support CD. See section “3.3.2 Utilities menu” for details.



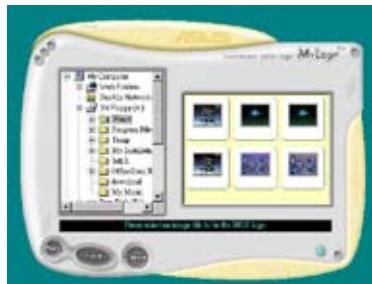
- Before using the ASUS MyLogo™, use the AFUDOS BIOS Flash utility to make a copy of your original BIOS file, or obtain the latest BIOS version from the ASUS website. See section “5.1.3 AFUDOS utility.”
- Make sure that the BIOS item **Full Screen Logo** is set to [Enabled] if you wish to use ASUS MyLogo2. See section “5.6.2 Boot Settings Configuration”.
- You can create your own boot logo image in GIF, JPG, or BMP file formats.

To launch the ASUS MyLogo™:

1. Launch the ASUS Update utility. Refer to section “3.4.3 ASUS Update utility” for details.
2. Select **Options** from the drop down menu, then click **Next**.
3. Check the option **Launch MyLogo to replace system boot logo before flashing BIOS**, then click **Next**.
4. Select **Update BIOS from a file** from the drop down menu, then click **Next**.
5. When prompted, locate the new BIOS file, then click **Next**. The ASUS MyLogo window appears.
6. From the left window pane, select the folder that contains the image you intend to use as your boot logo.



- When the logo images appear on the right window pane, select an image to enlarge by clicking on it.



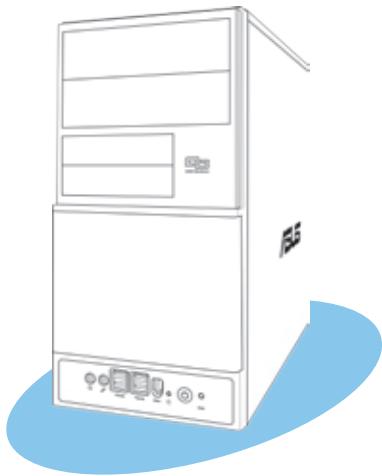
- Adjust the boot image to your desired size by selecting a value on the **Ratio** box.



- When the screen returns to the ASUS Update utility, flash the original BIOS to load the new boot logo.
- After flashing the BIOS, restart the computer to display the new boot logo during POST.

Chapter 4

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.



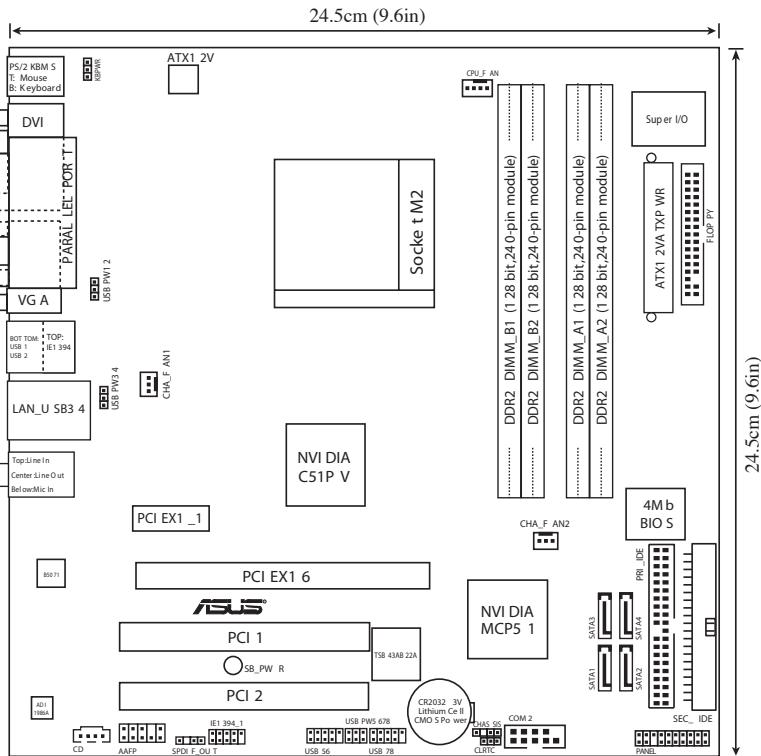
ASUS Vintage V2-AH2

Motherboard info

4.1 Motherboard information

The PC(desktop barebone) comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

Motherboard layout



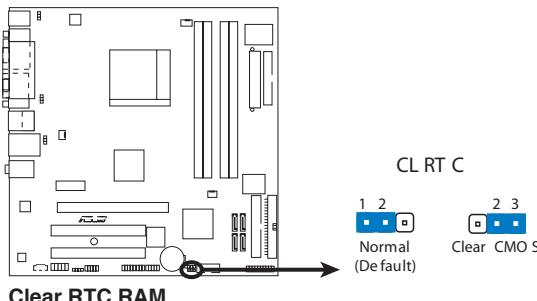
4.2 Jumpers

1. Clear RTC RAM (CLRTC)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in the CMOS, which includes the system setup information such as system passwords.

To erase the RTC RAM:

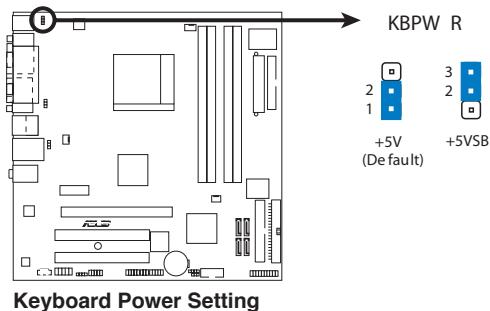
1. Turn OFF the computer and unplug the power cord.
2. Remove the battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2.
4. Reinstall the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the key during the boot process and enter BIOS setup to re-enter data.



Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure.

2. Keyboard power (3-pin KBPWR)

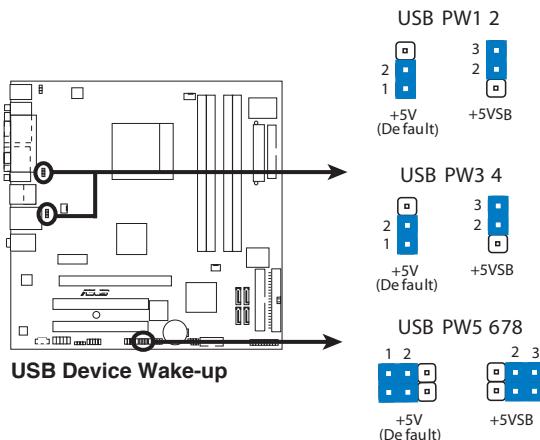
This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) if you wish to wake up the computer when you press a key on the keyboard (the default is the Space Bar). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.



3. USB device wake-up (3-pin USBPW12, USBPW34, USBPW56, USBPW78)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).

The USBPW12 and USBPW34 jumpers are for the rear USB ports. The USBPW56 and USBPW78 jumper is for the internal USB connectors that you can connect to additional USB ports.



- The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system would not power up.
- The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

4.3 Connectors

4.3.1 Rear panel connectors

Refer to section “1.3 Rear panel” for details on the rear panel connectors.

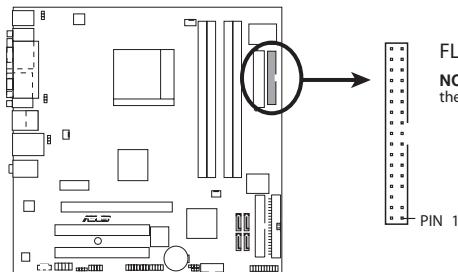
4.3.2 Internal connectors

1. Floppy disk drive connector (34-1 pin FLOPPY)

This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.



Pin 5 on the connector is removed to prevent incorrect cable connection when using a FDD cable with a covered Pin 5.



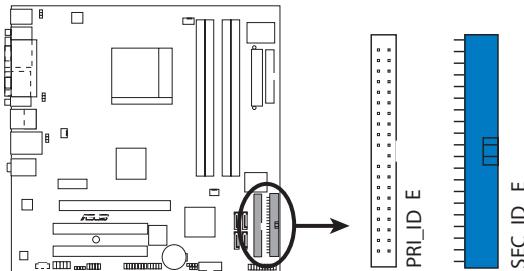
Floppy Disk Drive Connector

2. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

This connector is for an Ultra DMA 100/66 signal cable. The Ultra DMA 100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 100/66 IDE master device (hard disk drive). If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.



- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 100/66 IDE devices.

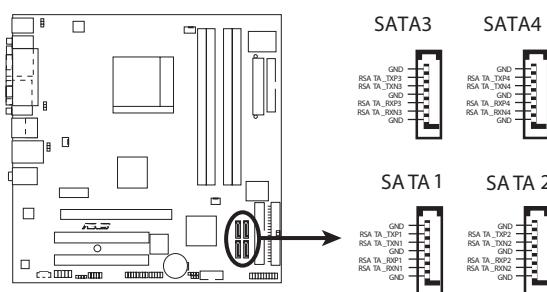


NOTE: Orient the red markings (usually zigzag) on the ID ribbon cable to PIN 1.

IDE Connectors

3. Serial ATA connectors (7-pin SATA1, SATA2)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



SATA Connectors



Important notes on Serial ATA

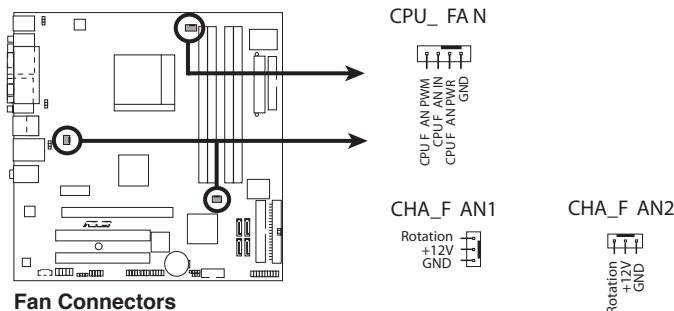
- You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA hard disk drives.
- When using the connectors in standard IDE mode, connect the primary (boot) hard disk drive to the SATA1 or SATA2 connector.

4. CPU and chassis fan connectors (4-pin CPU_FAN, CHA_FAN)

The fan connectors support cooling fans of 350 mA~740 mA (8.88 W max.) or a total of 1 A~2.22 A (26.64 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

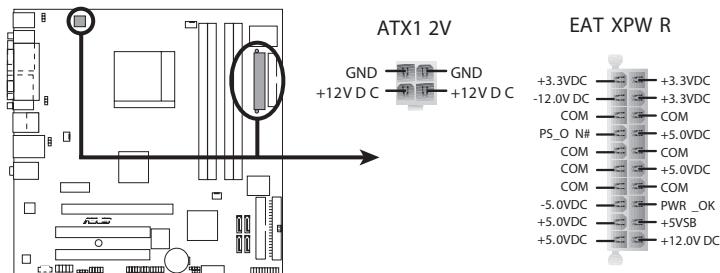


Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



5. ATX power connectors (24-pin ATXPWR, 4-pin ATX12V)

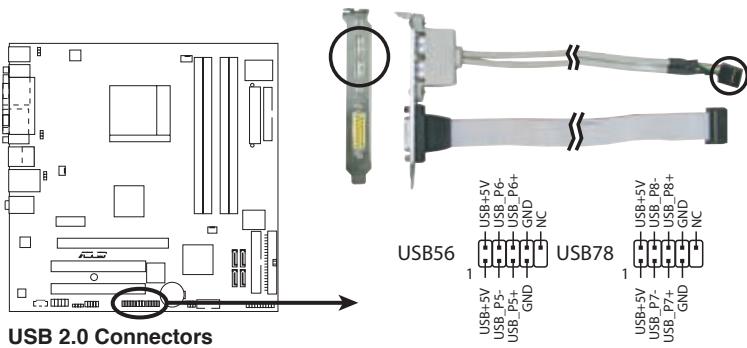
These connectors are for ATX power supply plugs. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



ATX Power Connectors

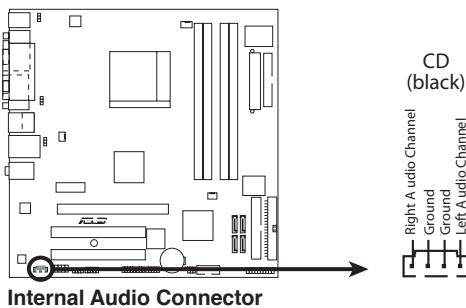
6. USB connectors (10-1 pin USB56, USB78)

These connectors are for USB 2.0 ports. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



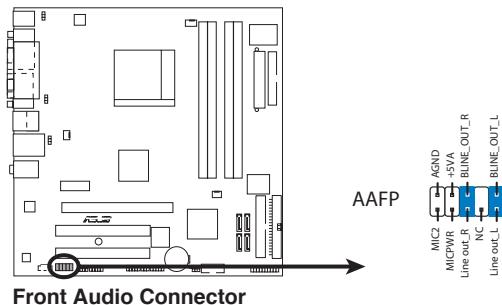
7. Internal audio connectors (4-pin CD [black])

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.



8. Front panel audio connector (10-1 pin FP_AUDIO)

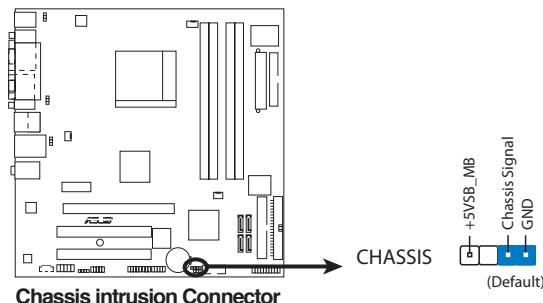
This connector is for a chassis-mounted front panel audio I/O module that supports AC'97 audio standard.



9. Chassis intrusion connector (4-1 pin CHASSIS)

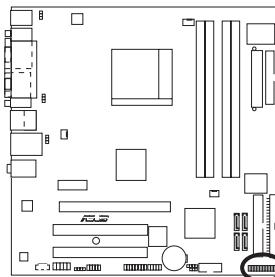
This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

By default, the pins labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.

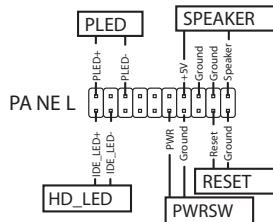


10. System panel connector (20-1 pin PANEL)

This connector supports several chassis-mounted functions.



System Panel Connector



* Requires an ATX power supply .



The system panel connector is color-coded for easy connection. Refer to the connector description below for details.

- **System power LED (Green 3-pin PLED)**

This 3-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity (Red 2-pin IDE_LED)**

This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **System warning speaker (Orange 4-pin SPEAKER)**

This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

- **Power/Soft-off button (Yellow 2-pin PWRSW)**

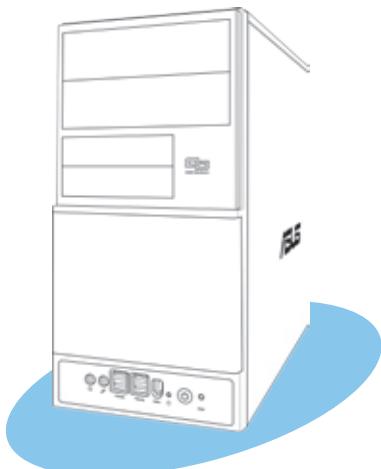
This connector is for the system power button. Pressing the power button turns the system ON or puts the system in SLEEP or SOFT-OFF mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

- **Reset button (Blue 2-pin RESET)**

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.



5.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **Award BIOS Flash Utility** (Updates the BIOS in DOS mode using a bootable floppy disk.)
2. **ASUS CrashFree BIOS 2** (Updates the BIOS using a bootable floppy disk or the motherboard support CD when the BIOS file fails or gets corrupted.)
3. **ASUS EZ Flash** (Updates the BIOS in DOS using a floppy disk or the motherboard support CD.)
4. **ASUS Update** (Updates the BIOS in Windows® environment.)

Refer to the corresponding sections for details on these utilities.



Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AwardBIOS Flash utilities.

5.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.
DOS environment
 - a. Insert a 1.44MB floppy disk into the drive.
 - b. At the DOS prompt, type **format A:/s** then press <Enter>.
Windows® XP environment
 - a. Insert a 1.44 MB floppy disk to the floppy disk drive.
 - b. Click **Start** from the Windows® desktop, then select **My Computer**.
 - c. Select the 3 1/2 Floppy Drive icon.
 - d. Click **File** from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.
 - e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.
Windows® 2000 environment

To create a set of boot disks for Windows® 2000:

- a. Insert a formatted, high density 1.44 MB floppy disk into the drive.

- b. Insert the Windows® 2000 CD to the optical drive.
- c. Click **Start**, then select **Run**.
- d. From the Open field, type
D:\bootdisk\makeboot a:
assuming that D: is your optical drive.
- e. Press <Enter>, then follow screen instructions to continue.

2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

5.1.2 Updating the BIOS

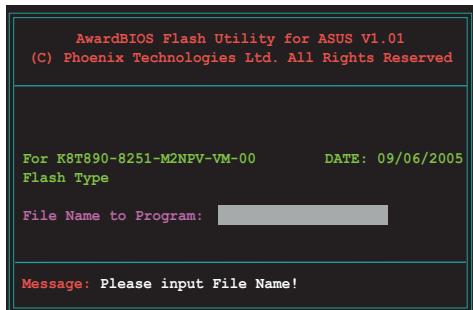
The Basic Input/Output System (BIOS) can be updated using the AwardBIOS Flash Utility. Follow these instructions to update the BIOS using this utility.

1. Download the latest BIOS file from the ASUS web site. Rename the file to M2NPV-VM.BIN and save it to a floppy disk.

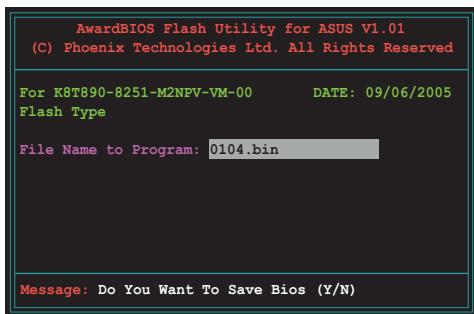


Save only the updated BIOS file in the floppy disk to avoid loading the wrong BIOS file.

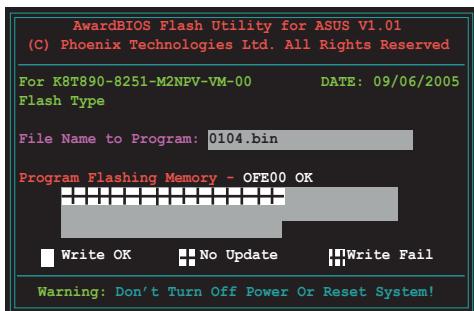
2. Copy the AwardBIOS Flash Utility (awdflash.exe) from the Software folder of the support CD to the floppy disk with the latest BIOS file.
3. Boot the system in DOS mode using the bootable floppy disk you created earlier.
4. When the A:> appears, replace the bootable floppy disk with the floppy disk containing the new BIOS file and the Award BIOS Flash Utility.
5. At the prompt, type awdflash then press <Enter>. The Award BIOS Flash Utility screen appears.



6. Type the BIOS file name in the File Name to Program field, then press <Enter>.

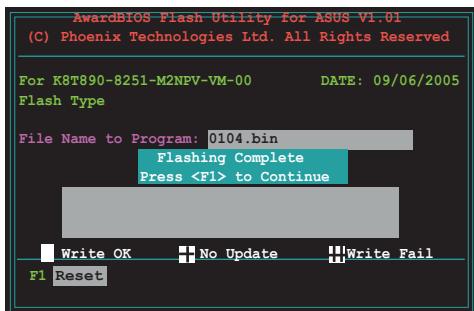


7. Press <N> when the utility prompts you to save the current BIOS file. The following screen appears.
8. The utility verifies the BIOS file in the floppy disk and starts flashing the BIOS file.



Do not turn off or reset the system during the flashing process!

9. The utility displays a Flashing Complete message indicating that you have successfully flashed the BIOS file. Remove the floppy disk then press <F1> to restart the system.



5.1.3 Saving the current BIOS file

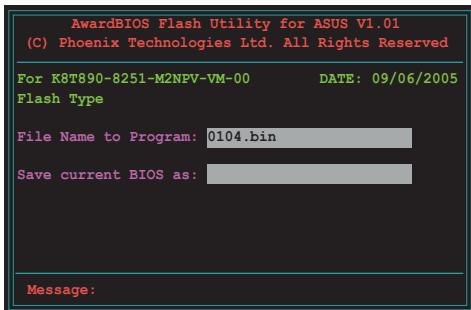
You can use the AwardBIOS Flash Utility to save the current BIOS file. You can load the current BIOS file when the BIOS file gets corrupted during the flashing process.



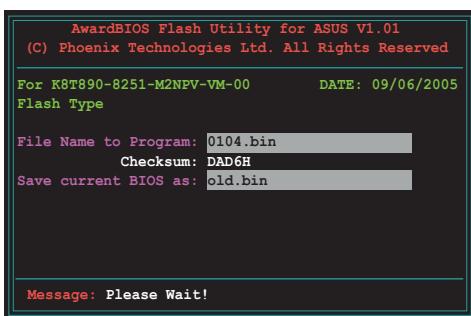
Make sure that the floppy disk has enough disk space to save the file.

To save the current BIOS file using the AwardBIOS Flash Utility:

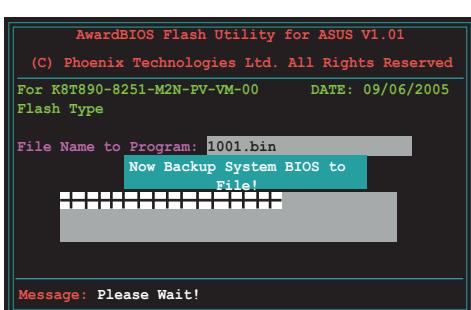
1. Follow steps 1 to 6 of the previous section.
2. Press **<Y>** when the utility prompts you to save the current BIOS file. The following screen appears.



3. Type a filename for the current BIOS file in the Save current BIOS as field, then press **<Enter>**.



4. The utility saves the current BIOS file to the floppy disk, then returns to the BIOS flashing process.



5.1.4 ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.



Prepare the motherboard support CD or the floppy disk containing the updated motherboard BIOS before using this utility.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Turn on the system.
2. Insert the motherboard support CD to the optical drive.
3. The utility displays the following message and automatically checks the CD for the BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
  Found CDROM, try to Boot from it... Pass
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from a floppy disk

To recover the BIOS from the support CD:

1. Remove any CD from the optical drive, then turn on the system.
2. Insert the floppy disk with the original or updated BIOS file to the floppy disk drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When no CD is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
Found CDROM, try to Boot from it... Fail

Detecting floppy drive A media...
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.



The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

5.1.5 ASUS EZ Flash utility

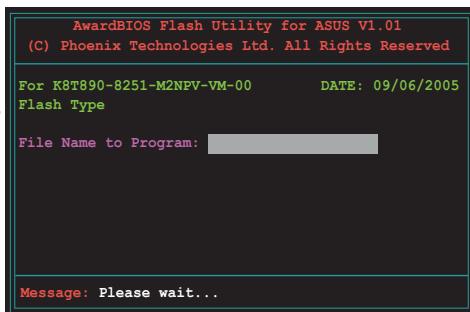
The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing **<Alt> + <F2>** during the Power-On Self-Test (POST).

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard.
2. Save the BIOS file to a floppy disk, then restart the system.
3. Press **<Alt> + <F2>** during POST to display the following.

Insert Disk then press Enter or ESC to continue POST

4. Insert the floppy disk that contains the BIOS file to the floppy disk drive then press **<Enter>**. The following screen appears.



5. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.



Do not shutdown or reset the system while updating the BIOS to prevent system boot failure!

5.1.6 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.



ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1. Place the support CD in the optical drive. The Drivers menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX**. See page 3-4 for the Utilities screen menu.
3. The ASUS Update utility is copied to your system.

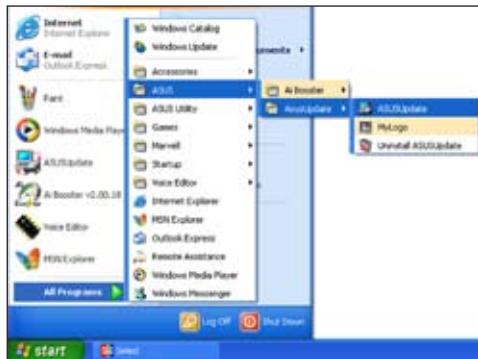


Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.



2. Select Update BIOS from the Internet option from the drop-down menu, then click **Next**.
3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.
5. Follow the screen instructions to complete the update process.



The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.



Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.



3. Locate the BIOS file from the **Open** window, then click **Open**.
4. Follow the screen instructions to complete the update process.



5.2 BIOS setup program

This motherboard supports a programmable Low-Pin Count (LPC) chip that you can update using the provided utility described in section “2.1 Managing and updating your BIOS.”

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup”. This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the LPC chip.

The LPC chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press **** during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

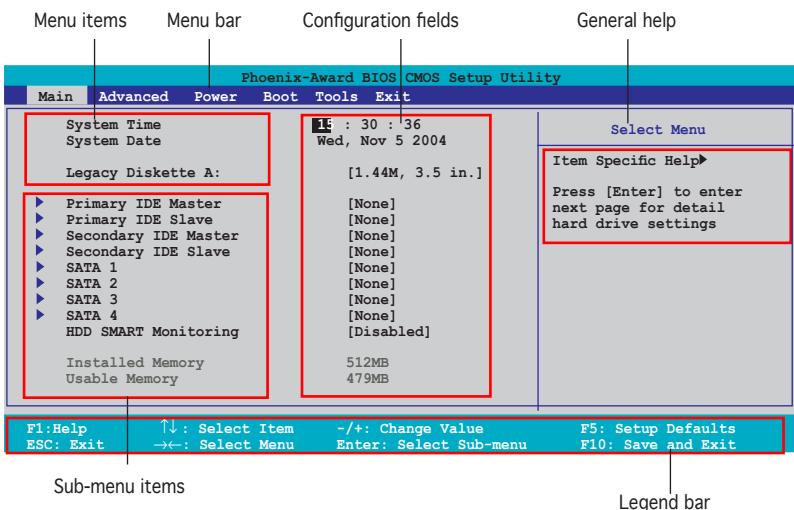
If you wish to enter Setup after POST, restart the system by pressing **<Ctrl+Alt+Del>**, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.



- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section “2.7 Exit Menu.”
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard and .

5.2.1 BIOS menu screen



5.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Power	For changing the advanced power management (APM) configuration
Boot	For changing the system boot configuration
Exit	For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.



- The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS information.

5.2.3 Legend bar

At the bottom of the Setup screen is a legend bar. The keys in the legend bar allow you to navigate through the various setup menus. The following table lists the keys found in the legend bar with their corresponding functions.

Navigation Key	Function
<F1>	Displays the General Help screen
<F5>	Loads setup default values
<Esc>	Exits the BIOS setup or returns to the main menu from a sub-menu
Left or Right arrow	Selects the menu item to the left or right
Up or Down arrow	Moves the highlight up or down between fields
Page Down or – (minus)	Scrolls backward through the values for the highlighted field
Page Up or + (plus)	Scrolls forward through the values for the highlighted field
<Enter>	Brings up a selection menu for the highlighted field
<F10>	Saves changes and exit

5.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

5.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the item has a sub-menu. To display the sub-menu, select the item and press <Enter>.

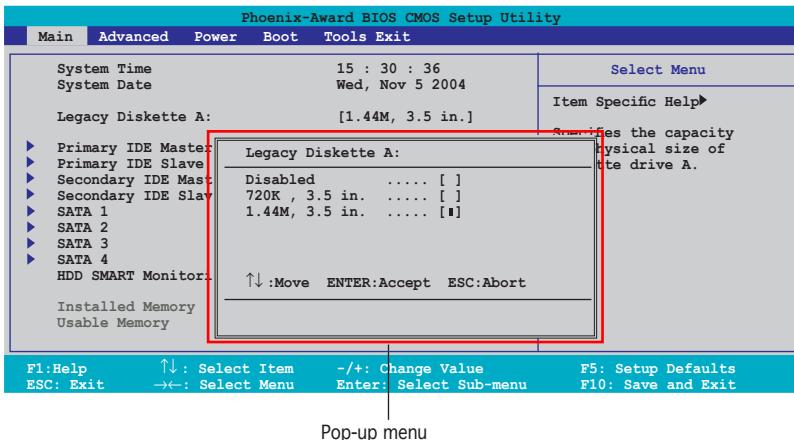
5.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to “2.2.7 Pop-up window.”

5.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.



5.2.8 General help

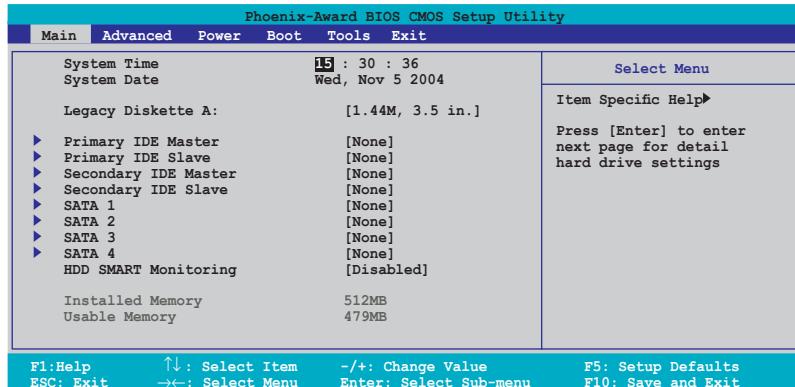
At the top right corner of the menu screen is a brief description of the selected item.

5.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.



Refer to section “2.2.1 BIOS menu screen” for information on the menu screen items and how to navigate through them.



5.3.1 System Time [xx:xx:xxxx]

Allows you to set the system time.

5.3.2 System Date [Day xx/xx/yyyy]

Allows you to set the system date.

5.3.3 Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled] [720K , 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

5.3.4 Primary and Secondary IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

Phoenix-Award BIOS CMOS Setup Utility		
Main		
Primary IDE Master		Select Menu
Primary IDE Master	Access Mode [Auto]	Item Specific Help► Press [Enter] to select
Capacity	0 MB	
Cylinder	0	
Head	0	
Sector	0	
PIO Mode	[Auto]	
UDMA Mode	[Auto]	
Transfer Mode	None	

F1:Help $\uparrow\downarrow$: Select Item $-/+$: Change Value F5: Setup Defaults
ESC: Exit $\rightarrow\leftarrow$: Select Menu Enter: Select Sub-menu F10: Save and Exit

The BIOS automatically detects the values opposite the dimmed items (Capacity, Cylinder, Head, Sector and Transfer Mode). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

IDE Primary Master/Slave [Auto]; IDE Secondary Master/Slave [Auto]

Select [Auto] to automatically detect an IDE hard disk drive. If automatic detection is successful, the BIOS automatically fills in the correct values for the remaining fields on this sub-menu. If the hard disk was already formatted on a previous system, the setup BIOS may detect incorrect parameters. Select [Manual] to manually enter the IDE hard disk drive parameters. If no drive is installed select [None].

Configuration options: [None] [Auto] [Manual]

Access Mode [Auto]

The default [Auto] allows automatic detection of an IDE hard disk drive. Select [CHS] for this item if you set the IDE Primary Master/Slave to [Manual]. Configuration options: [CHS] [LBA] [Large] [Auto]



Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.

PIO Mode [Auto]

Sets the PIO mode for the IDE device.

Configuration options: [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

UDMA Mode [Auto]

Disables or sets the UDMA mode. Configuration options: [Disabled] [Auto]

Transfer Mode

Shows the Transfer mode. This item is not configurable.



After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

5.3.5 HDD SMART Monitoring [Disabled]

Allows you to enable or disable the HDD Self-Monitoring Analysis and Reporting Technology (SMART) feature.

Configuration options: [Disabled] [Enabled]

5.4 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.



Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

Phoenix-Award BIOS CMOS Setup Utility					
Main	Advanced	Power	Boot	Tools	Exit
<ul style="list-style-type: none">▶ JumperFree Configuration▶ AI NET2▶ CPU Configuration▶ Chipset▶ PCI/PnP▶ Onboard Device Configuration					Select Menu
Item Specific Help▶ Adjust system frequency/voltage.					

5.4.1 JumperFree Configuration

Phoenix-Award BIOS CMOS Setup Utility	
Advanced	
JumperFree Configuration	Select Menu

Frequency Configuration

The items in this sub-menu show the frequency information auto-detected by the BIOS.

AI Tuning [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options:

Manual	Allows you to individually set overclocking parameters.
Auto	Loads the optimal settings for the system.

Standard	Loads the standard settings for the system.
AI Overclock	Loads overclocking profiles with optimal parameters for stability when overclocking.

5.4.2 AI Net2

Phoenix-Award BIOS CMOS Setup Utility			
AI NET2		Select Menu	
POST Check LAN Cable	[Disabled]		Item Specific Help»
Pair			Enable/Disable LAN cable
LAN1 (1-2)	Status	Length	check during POST.
LAN1 (3-6)	Open	N/A	
LAN1 (4-5)	Open	N/A	
LAN1 (7-8)	Open	N/A	

POST Check LAN Cable [Disabled]

Allows you to disable or enable the LAN cable check during the POST.
 Configuration options: [Enabled] [Disabled]

5.4.2 CPU Configuration

Phoenix-Award BIOS CMOS Setup Utility		
Advanced	CPU Configuration	
	Select Menu	
CPU Type	AMD Sempron(tm) Processor 3200+	
CPU Speed	1800MHz	Item Specific Help▶▶
Cache RAM	128K	Enable/Disable AMD
► DRAM Configuration		Coll'n'Quiet function
AMD Cool'n'Quiet Function	[Disabled]	which support P-state
		transitions in AMD
		processors.

DRAM Configuration

The items in this sub-menu show the DRAM-related information auto-detected by the BIOS.

Phoenix-Award BIOS CMOS Setup Utility		
Advanced	DRAM Configuration	Select Menu
Memory Clock Frequency	[Auto]	Item Specific Help▶▶
Tc1	[Auto]	<Enter> to select DARM
Trcd	[Auto]	configuration by
Trp	[Auto]	[Auto] is recommended.
Tras	[Auto]	[Manual] allows you to
Trwt	[Auto]	set each
1T/2T Memory Timing	[Auto]	configuration on your
DQS Signal Timing Training Control	[Perform DQS]	own.
Memory Hole Remapping	[Enabled]	
Bottom of 32-bit[31:24] 10 space	[E0]	
Bottom of UMA DRAM [31:24]	[FC]	

F1:Help ↑: Select Item -/+: Change Value F5: Setup Defaults
ESC: Exit →←: Select Menu Enter: Select Sub-menu F10: Save and Exit

Memory Clock Frequency [Auto]

Sets the memory clock. Configuration options: [Auto] [DDR400] [DDR533] [DDR667] [DDR800]

Tc1 [Auto]

Configuration options: [Auto] [3] [4] [5] [6]

Trcd [Auto]

Configuration options: [Auto] [3] [4] [5] [6]

Trp [Auto]

Configuration options: [Auto] [3] [4] [5] [6]

Tras [Auto]

Configuration options: [Auto] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18]

Trc [Auto]

Configuration options: [Auto] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26]

Trwt [Auto]

Configuration options: [Auto] [2] [3] [4] [5] [6] [7] [8] [9]

1T/2T Memory Timing [Auto]

Configuration options: [Auto] [1T] [2T]

DQS Signal Timing Training Control [Perform DQS]

Allows you to perform or skip DQS.

Configuration options: [Skip DQS] [Perform DQS]

Memory Hole Remapping [Enabled]

Enables or disables the memory hole remapping.

Configuration options: [Disabled] [Enabled]

Bottom of 32-bit [31:24] IO space [EO]

Allows you to key in a HEX number ranging from 0000 to 00EO.

Bottom of UMA DRAM [31:24] [FC]

Allows you to key in a HEX number ranging from 0000 to 00FO.

AMD Cool'n'Quiet control [Disabled]

Allows you to disable or set the AMD Cool 'n' Quiet!TM Technology feature.

Configuration options: [Auto] [Disabled]



This feature requires the AMD CPU heatsink, fan assembly with monitor chip and BIOS utility.

5.4.3 Chipset

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
Chipset		Select Menu
Frame Buffer Size	[32M]	Item Specific Help►►
ECC	[Auto]	Select Frame Buffer Size
Spread Spectrum	[Down]	for Onboard Graphic
PCIE Spread Spectrum	[Enabled]	
SATA Spread Spectrum	[Enabled]	
HT Spread Spectrum	[Down]	

Frame Buffer Size [Disabled]

Allows you to disable or select the frame buffer size for onboard graphic.
Configuration options: [16M] [32M] [64M] [128M] [Disabled]

ECC [Auto]

Allows you to set ECC. Configuration options: [Auto] [Disabled]

Spread Spectrum [Down]

Allows you to enable or disable the spread spectrum for CPU.
Configuration options: [Disabled] [Center] [Down]

PCIE Spread Spectrum [Enabled]

Allows you to enable or disable the spread spectrum for PCI.
Configuration options: [Disabled] [Enabled]

SATA Spread Spectrum [Enabled]

Allows you to enable or disable the spread spectrum for SATA.
Configuration options: [Disabled] [Enabled]

HT Spread Spectrum [Disabled]

Allows you to enable or disable the spread spectrum for Hyper Transport.
Configuration options: [Disabled] [Center] [Down]

5.4.4 PCI PnP

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		Select Menu
PCI PnP		Item Specific Help ►
Plug & Play O/S	[No]	
Primary Display Adapter	[PCI-E]	
Resources Controlled By	[Auto]	
x IRQ Resources		
PCI Express relative items		
Maximum Payload Size	[4096]	

Plug & Play O/S [No]

When set to [No], the BIOS configures all the devices in the system.
When set to [Yes] and if you install a Plug and Play operating system, the
operating system configures the Plug and Play devices not required for
boot. Configuration options: [No] [Yes]

Primary Display Adapter [PCI-E]

Allows you to select a graphics controller as the primary boot device.
Configuration options: [PCI] [Onboard] [PCI-E]

Resources Controlled By [Auto]

When set to [Auto], the BIOS automatically configures all the boot and Plug and Play compatible devices. Set to [Manual] if you want to assign the IRQ DMA and memory base address fields.

Configuration options: [Auto] [Manual]



When the item Resources Controlled By is set to [Auto], the item IRQ Resources is grayed out and not user-configurable. Refer to the section "IRQ Resources" for information on how to enable this item.

IRQ Resources

This sub-menu is activated only when the Resources Controlled By item is set to Manual.

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
IRQ Resources	PCI Device	Select Menu
IRQ-3 assigned to	[PCI Device]	Item Specific Help>>>
IRQ-4 assigned to	[PCI Device]	Legacy ISA for devices
IRQ-5 assigned to	[PCI Device]	compliant with the
IRQ-7 assigned to	[PCI Device]	original PC AT bus
IRQ-9 assigned to	[PCI Device]	specification, PCI/ISA
IRQ-10 assigned to	[PCI Device]	PnP for devices
IRQ-11 assigned to	[PCI Device]	compliant with the
IRQ-12 assigned to	[PCI Device]	Plug and Play standard
IRQ-14 assigned to	[PCI Device]	whether designed for
IRQ-15 assigned to	[PCI Device]	PCI or ISA bus
		architecture

IRQ-xx assigned to

When set to [PCI Device], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices. Configuration options: [PCI Device] [Reserved]

Maximum Payload Size [4096]

Sets the maximum payload size in bytes for PCI Express devices.
Configuration options: [128] [256] [512] [1024] [2048] [4096]

5.4.5 Onboard Devices Configuration

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
Onboard Device Configuration		Select Menu
► IDE Function Setup	[Enabled]	Item Specific Help ►
► NVRAID Configuration		
► USB Configuration		
Onboard LAN	[Enabled]	
Onboard LAN Boot ROM	[Disabled]	
Onboard IEEE 1394	[Enabled]	
HD Audio	[Enabled]	
Serial Port2 Address	[2F8/IRQ3]	
Parallel Port Address	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x ECP Mode Use DMA	3	

F1:Help ↑: Select Item -/+: Change Value Enter: Select Sub-menu F5: Setup Defaults
 ESC: Exit →←: Select Menu F10: Save and Exit

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
IDE Function Setup		Select Menu
Onchip IDE Channel0	[Enabled]	Item Specific Help ►
Onchip IDE Channel1	[Enabled]	
IDE DMA transfer access	[Enabled]	
SATA Port 1,2	[Enabled]	
SATA DMA transfer	[Enabled]	
SATA Port 3,4	[Enabled]	
SATA DMA transfer	[Enabled]	
IDE Prefetch Mode	[Enabled]	

F1:Help ↑: Select Item -/+: Change Value Enter: Select Sub-menu F5: Setup Defaults
 ESC: Exit →←: Select Menu F10: Save and Exit

Onchip IDE Channel0 [Enabled]

Allows you to enable or disable Onchip IDE Channel 0.

Configuration options: [Enabled] [Disabled]

Onchip IDE Channel1 [Enabled]

Allows you to enable or disable Onchip IDE Channel 1.

Configuration options: [Enabled] [Disabled]

IDE DMA transfer access [Enabled]

Presses [Enter] to enable or disable IDE DMA transfer access.

Configuration options: [Enabled] [Disabled]

SATA Port 1,2 [Enabled]

Allows you to enable or disable Onchip SATA1 (Port1, Port2).

Configuration options: [Enabled] [Disabled]

SATA DMA transfer [Enabled]

Switches to support SATA DMA transfer.

Configuration options: [Enabled] [Disabled]

SATA Port 3,4 [Enabled]

Allows you to enable or disable Onchip SATA2 (Port3, Port4)

Configuration options: [Enabled] [Disabled]

SATA DMA transfer [Enabled]

Switches to support SATA DMA transfer.

Configuration options: [Enabled] [Disabled]

IDE Prefetch Mode [Enabled]

Allows you to enable or disable the IDE PIO read prefetch mode.

Configuration options: [Enabled] [Disabled]

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
NVRAID Configuration		Select Menu
RAID Enable	[Enabled]	Item Specific Help►►
First SATA Master RAID	Disabled	
Second SATA Master RAID	Disabled	
Third SATA Master RAID	Disabled	
Fourth SATA Master RAID	Disabled	

RAID Enable [Enabled]

Disables or enables nVIDIA RAID feature.

Configuration options: [Disabled] [Enabled]

First SATA Master RAID [Enabled]

Selects this device as the RAID set.

Configuration options: [Disabled] [Enabled]

Second SATA Master RAID [Enabled]

Selects this device as the RAID set.

Configuration options: [Disabled] [Enabled]

Third SATA Master RAID [Enabled]

Selects this device as the RAID set.

Configuration options: [Disabled] [Enabled]

Fourth SATA Master RAID [Enabled]

Selects this device as the RAID set.

Configuration options: [Disabled] [Enabled]

5.4.6 USB Configuration

The items in this menu allows you to change the USB-related features.

Select an item then press <Enter> to display the configuration options.

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
USB Configuration		Select Menu
USB Controller	[Enabled]	Item Specific Help▶
USB 2.0 Controller	[Enabled]	
USB Legacy support	[Auto]	

USB Controller [Enabled]

Allows you to enable or disable the USB controller.

Configuration options: [Enabled] [Disabled]

USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 controller.

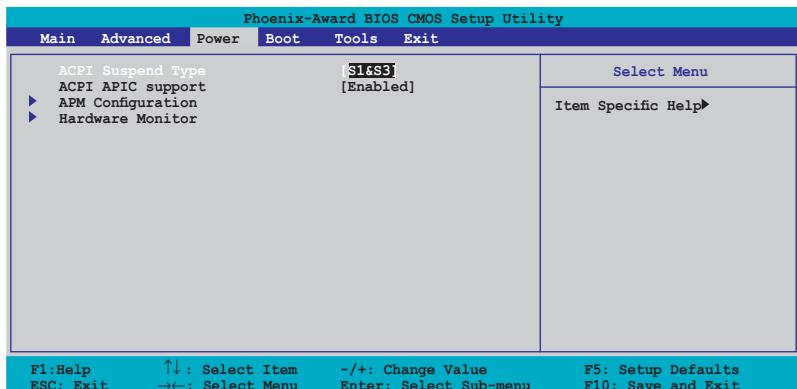
Configuration options: [Disabled] [Enabled]

USB Legacy Support [Auto]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). Configuration options: [Auto] [Disabled] [Enabled]

5.5 Power menu

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



5.5.1 ACPI Suspend Type [S1&S3]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.

Configuration options: [S1 (POS)] [S3(STR)] [S1&S3]

5.5.2 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.5.3 APM Configuration

Phoenix-Award BIOS CMOS Setup Utility	
Power	
APM Configuration	Select Menu
Restore on AC Power Loss [Disabled]	Item Specific Help ►
HDD Down In Suspend [Disabled]	
PWR Button < 4 secs [Instant-Off]	
Power Up On By PCI/PCIE Devices [Disabled]	
Power On By External Modems [Disabled]	
Power On By RTC Alarm [Disabled]	
x Date (of Month)Alarm 0	
x Alarm Time (hh:mm:ss) 0 : 0 : 0	
Power On By PS/2 Mouse [Disabled]	
Power On By PS/2 Keyboard [Disabled]	

Restore on AC Power Loss [Power On]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.

Configuration options: [Power Off] [Power On] [Last State]

HDD Down In Suspend [Disabled]

Allows you to enable or disable the HDD Down in Suspend feature.

Configuration options: [Power Off] [Power On] [Last State]

PWR Button < 4 secs [Instant-OFF]

Allows you to set the event after the power button is pressed for less than 4 seconds. Configuration options: [Instant-Off] [Suspend]

Power On By PCI/PCIE Devices [Disabled]

Allows you to disable or enable the Power On By PCI/PCIE Devices. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Power On By External Modems [Disabled]

Allows you to enable or disable the Power On By External Modems function. Configuration options: [Disabled] [Enabled]

Power On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items Date (of Month) and Resume Time (hh:mm:ss) become configurable with set values.

Configuration options: [Disabled] [Enabled]

Power Up By PS/2 Mouse [Disabled]

Allows you to disable or enable the Power Up by PS/2 Mouse function.

Configuration options: [Disabled] [Enabled]

Power Up By PS/2 Keyboard [Disabled]

When set to [Enabled], this parameter allows you to use the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

5.5.4 Hardware Monitor

The items in this sub-menu displays the hardware monitor values automatically detected by the BIOS. Select an item then press <Enter> to display the configuration options.

Phoenix-Award BIOS CMOS Setup Utility	
Power	
Hardware Monitor	Select Menu
Q-Fan Controller [Enabled]	Item Specific Help
Vcore Voltage [1.64V]	
3.3V Voltage [3.24V]	
5V Voltage [5.21V]	
12V Voltage [11.71V]	
CPU Temperature 57°C	
M/B Temperature 35°C	
CPU Fan speed 4265 RPM	
Chassis Fan1 speed 0 RPM	
Chassis Fan2 speed 0 RPM	
Fan Type Select [3 Pin Fan]	
Start Up Temperature (°C) [53]	
Start Up PWM [70]	
Fan2 Start Up PWM [48]	
Slope PWM [4 PWM/°C]	
CPU Fan Speed warning [Disabled]	

F1:Help
ESC: Exit

↑: Select Item
→: Select Menu

-/+: Change Value
Enter: Select Sub-menu

F5: Setup Defaults
F10: Save and Exit

Q-Fan Controller [Enabled]

Allows you to enable or disable the Q-Fan controller.

Configuration options: [Disabled] [Enabled]

VCORE Voltage, 12V Voltage, 3.3V Voltage, 5V Voltage[xx.x°C] or [Ignored]

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select [Ignored] if you do not want to display the detected temperatures.

CPU Temperature

M/B Temperature

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. These items are not user-configurable

CPU Fan Speed

Chassis Fan Speed

The onboard hardware monitor automatically detects and displays the Chassis, CPU, and Power fan speeds in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows 0. These items are not user-configurable.

Fan Type Select [3 Pin Fan]

Allows you to select the fan type.

Configuration options: [3 Pin Fan] [4 Pin Fan]

Start Up Temperature (°C) [53]

Allows you to enter a DEC number from 0 to 100. The fan starts up when CPU temperature is over this value.

Start Up PWM [48]

Allows you to set PWM value from 0 to 127 when fan starts up.

Start Up PWM [48]

Allows you to set PWM value from 48 to 127 when fan2 starts up.

Slope PWM [4 PWM/°C]

Sets PWM increase value when the temperature rises one degree.

Configuration options: [0 PWM/ °C] [1 PWM/ °C] [2 PWM/ °C]... [14 PWM/ °C] [15 PWM/ °C]

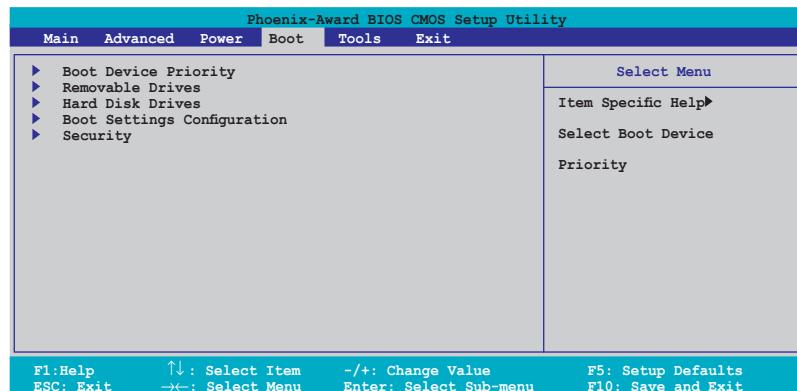
CPU Fan Speed warning

Allows you to disable the CPU Fan Speed warning function, or select a CPU fan speed when the system sends a warning message.

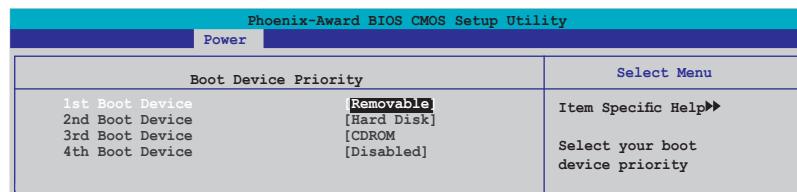
Configuration options: [Disabled] [800 RPM] [1200 RPM] [1600 RPM]

5.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



5.6.1 Boot Device Priority



1st ~ xxth Boot Device [Removable]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

Configuration options: [Removable] [Hard Disk Drive] [CDROM] [Legacy LAN] [Disabled]

5.6.2 Removable Drives

Phoenix-Award BIOS CMOS Setup Utility	
Boot	
Removable Drives	
1 Floppy Disks	Select Menu Item Specific Help▶▶

1. Floppy Disks

Allows you to select a removable drive attached to the system.

5.6.3 Hard Disk Drives

Phoenix-Award BIOS CMOS Setup Utility	
Boot	
Removable Drives	
1 Bootable Add-in Cards	Select Menu Item Specific Help▶▶

1. Bootable Add-in Cards

Allows you to select an add-in disk drive attached to the system.

5.6.4 Boot Settings Configuration

Phoenix-Award BIOS CMOS Setup Utility	
Boot	
Boot Settings Configuration	
Case Open Warning	[Enabled]
Quick Boot	[Disabled]
Boot Up Floppy Seek	[Disabled]
Bootup Num-Lock	[On]
TypeMatic Rate Setting	[Disabled]
TypeMatic Rate (Chars/Sec)	6
TypeMatic Delay (Msec)	250
OS Select For DRAM > 64MB	[Non-OS2]
Full Screen LOGO	[Enabled]
Halt On	[All, But Keyboard]

Case Open Warning [Enabled]

Enables or disables the chassis open status feature. Setting to Enabled, clears the chassis open status. Configuration options: [Disabled] [Enabled]

Quick Boot [Enabled]

Enables or disables the quick boot feature. When Enabled, the system skips certain tests while booting. Configuration options: [Disabled] [Enabled]

Boot Up Floppy Seek [Disabled]

Enable this item to check for a boot floppy disk during POST. Configuration options: [Disabled] [Enabled]



The items Typematic Rate (Chars/Sec) and Typematic Delay (Msec) becomes user-configurable only when the item Typematic Rate Setting is enabled.

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock. Configuration options: [Off] [On]

Typematic Rate Setting [Disabled]

Allows you to set the keystroke rate. Enable this item to configure the Typematic Rate (Chars/Sec) and the Typematic Delay (Msec). Configuration options: [Disabled] [Enabled]

OS Select for DRAM > 64MB [Non-OS2]

Set this item to OS2 only when you are running on an OS/2 operating system with an installed RAM of greater than 64 KB.

Configuration options: [Non-OS2] [OS2]

Full Screen LOGO [Enabled]

Allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled]



Make sure that the above item is set to [Enabled] if you want to use the ASUS MyLogo™ feature.

Halt On [All, But Keyboard]

Allows you to error report type.

Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

5.6.5 Security

Phoenix-Award BIOS CMOS Setup Utility		
Boot		
Boot Settings Configuration		Select Menu
Supervisor Password	Clear	Item Specific Help ►►
User Password	Clear	Supervisor password
Password Check	[Setup]	controls full access, <Enter> to change password.

Supervisor Password

User Password

These fields allow you to set passwords:

To set a password:

1. Select an item then press <Enter>.
2. Type in a password using a combination of a maximum of eight (8) alpha-numeric characters, then press <Enter>.
3. When prompted, confirm the password by typing the exact characters again, then press <Enter>. The password field setting is changed to Set.

To clear the password:

1. Select the password field and press <Enter> twice. The following message appears:

PASSWORD DISABLED !!!
Press any key to continue...

2. Press any key to continue. The password field setting is changed to Clear.

A note about passwords

The Supervisor password is required to enter the BIOS Setup program preventing unauthorized access. The User password is required to boot the system preventing unauthorized use.

Forgot your password?

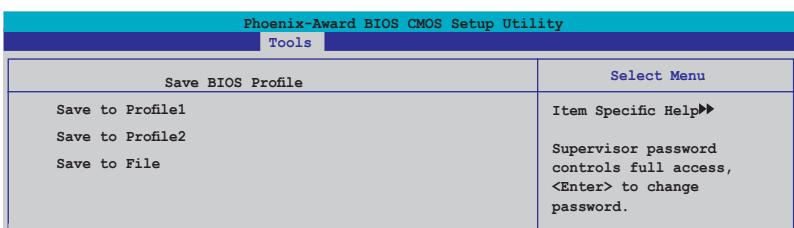
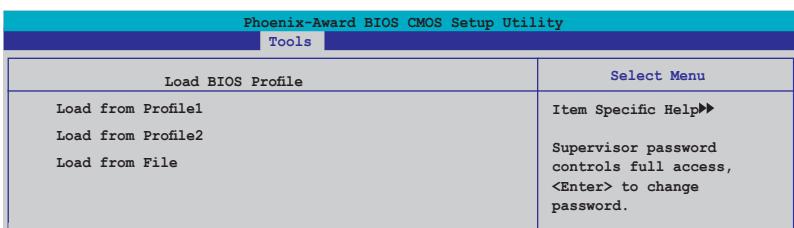
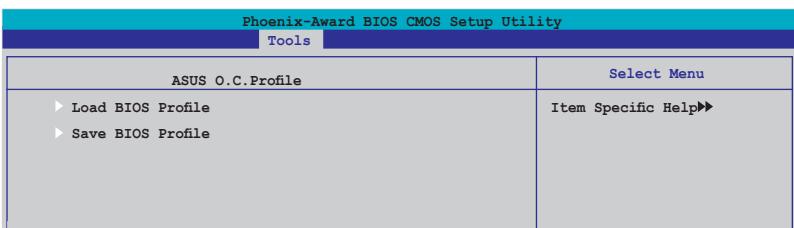
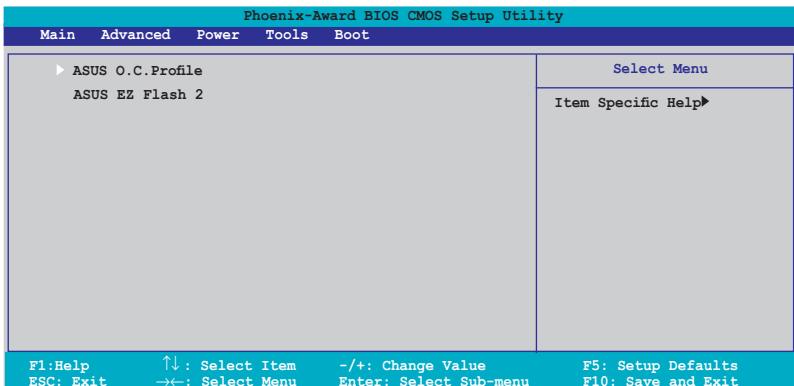
If you forget your password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. The RAM data containing the password information is powered by the onboard button cell battery. If you need to erase the CMOS RAM, refer to section “1.9 Jumpers” for instructions.

Password Check

This field requires you to enter the password before entering the BIOS setup or the system. Select [Setup] to require the password before entering the BIOS Setup. Select [System] to require the password before entering the system. Configuration options: [Setup] [System]

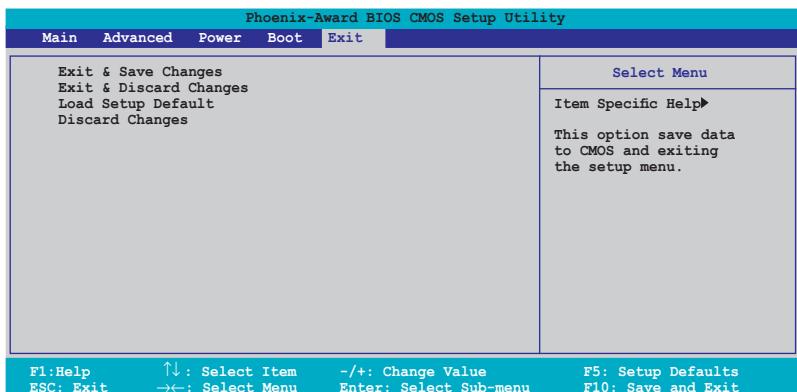
5.7 Tools menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



5.8 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **Yes** to save changes and exit.



If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press **<F5>**, a confirmation window appears. Select **Yes** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **Yes** to discard any changes and load the previously saved values.